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WEANING PATTERNS OF PRIMIPAROUS MOTHERS

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF NURSING

FACULTY OF NURSING

EDMONTON, ALBERTA

FALL 1986

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled WEANING PATTERNS OF PRIMIPAROUS MOTHERS submitted by KAREN MATULONIS WILLIAMS in partial fulfilment of the requirements for the degree of MASTER OF NURSING.

Janice M. Morse
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Date October 2, 1986

Abstract

The patterns of weaning and the ways mothers acquire the knowledge to wean have been virtually ignored by researchers. Although many researchers have measured the duration of breastfeeding, determined the age at which solid foods are usually introduced by mothers, and explored the reasons mothers give for weaning, there is a dearth of formal knowledge on the process of weaning. The purposes of this study were to discover and describe patterns of weaning and how mothers acquired the knowledge to wean. A qualitative research method was utilized to obtain data that described the process of weaning. Semi-structured telephone interviews, with open-ended questions, were conducted with 100 primiparous mothers during the course of weaning. Interviews were content-analyzed for recurrent patterns and themes of mothers' experiences of weaning.

Three patterns of weaning emerged. The first pattern, *gradual* weaning, was characterized as a slow, progressive elimination of breastfeedings over a period of one to eight weeks for the purpose of terminating breastfeeding. The second pattern, *minimal breastfeeding* (MBF), was characterized as a gradual weaning over six to eight weeks until there were only one or two breastfeedings daily. This pattern, of one or two feedings daily, continued for more than two weeks. Weaning resumed when the pattern of MBF was terminated. The third pattern, *sudden severance* from the breast, was characterized as weaning an infant from total breastfeedings within one day.

The average duration of breastfeeding was 9.43 months. Maternal age, type of delivery, and age and sex of the infant were not associated with the duration of breastfeeding. Reasons for weaning were categorized as mothers' needs, infants' developmental milestones, and coercion to wean. The commonest reason mothers gave for weaning was "return to work." The phenomenon of coercion to wean emerged as a dominant force on a mother's course of lactation. Thirty per cent of mothers stated that they had experienced "pressure to wean" and nine per cent reported pressure to wean as a

main reason for terminating breastfeeding. The doula has been acknowledged as a support person in a mother's decision to breastfeed. However, the doula is also a facilitator of weaning; by withdrawing support and urging the mother to wean, lactation is terminated.

Many authors have focused on the phenomenon of an infant's rejection of the breast. Of the 55 mothers who had experienced an infant's refusal of the breast, 51 attributed this behavior to the need to learn to suckle, a normal reaction to satiety, cognitive development, or the infant's gastric distention. Mothers sought advice about weaning from various sources such as publications specifically written for mothers, consulting with other mothers who had experience with weaning, and from nurses and physicians. Mothers gathered the information on weaning and then modified it to meet not only the demands and needs of their infants but also their own needs. The practical implications of this research for nursing are the development of teaching protocols about two methods of weaning, gradual and MBF. Teaching protocols should include the strategies mothers find useful in facilitating weaning. Because coercion to wean is an influencing factor on the course of lactation, breastfeeding and weaning instruction should also be given to families. Future research should focus on reasons why mothers terminate breastfeeding before six weeks and further evaluate methods of weaning. Additionally, observations of infant self-weaning are needed to validate the self-reports by mothers.

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TABLE OF CONTENTS

page

CHAPTER

I. INTRODUCTION 1

Definitions of Terms 3

II. REVIEW OF THE LITERATURE 4

Definitions of Weaning 4

Duration of Breastfeeding 6

Factors Influencing Mother's Decision to Wean 7

Fussy baby 7

Insufficient milk 7

Lack of doula 8

"Inconvenient" 9

Infants' rejection of the breast 9

Influence of nurses and physicians 10

Other related factors 10

Recommended Methods of Weaning 11

Historical and cultural accounts of weaning 11

Early accounts of advice on weaning 11

Abrupt weaning 12

Gradual weaning 13

Professional literature: Methods of weaning 13

Lay literature: Methods of weaning 15

Folk methods of weaning 17

Summary 17

III. METHODS 20

Data Collection 20

Instrument 20

Sample 22

Criteria for selection 22

Selection of sample 22

Sample size 23

Data Analysis 23

Validity and Reliability 24

Content validity 24

Validity of the results 24

Threats to the validity of the results 26

Reliability 26

Ethical Considerations 27

IV. RESULTS 28

Characteristics of Mothers 28

Duration of Breastfeeding 30

Reasons for Weaning 30

Mothers' needs 34

Infants' developmental milestones 35

Coercion to wean 35

Patterns of Weaning 36

Gradual weaning 36

The relief bottle 38

Case study I 40

One case of relactation 41

Weaning by minimal breastfeeding 41

Case study II 46

Sudden severance from the breast 46

Case study III 49

Folk methods of weaning 49

Hypothesis Testing of Selected Factors 50

Breastfeeding and the Working Mother 50

Introduction of Solids 55

Acquistion of the Knowledge to Wean 55

Prescriptive advice given by health professionals 55

Mothers' Perceptions of Support for Breastfeeding 58

Case study IV 62

Mothers' Expectations about Breastfeeding 62

Mothers' Feelings about the Weaning 63

Acceptance 63

Ambivalence 64

Feelings of loss 64

Infant's refusal of the breast 64

Mothers' Perceptions of Infants' Feelings about Weaning 65

Summary 65

V. DISCUSSION 69

Discussion of the Research Methods 69

Limitations of the Study 71

Duration of Breastfeeding 73

Signs of readiness to wean 74

Patterns of Weaning 75

Gradual weaning 75

Minimal breastfeeding (MBF) 76

Sudden severance 79

Reasons for Weaning 82

The Working Mother 83

Social Coercion to Wean 85

Refusal of the Breast 88

Mothers' Search for Information on Weaning 90

Mothers' Perceptions of Infants' Feelings toward Weaning 90

Mothers' Feelings upon Weaning 91

Nipple Confusion 92

Implications for Nursing Practice 93

Recommendations for Future Nursing Research 95

Summary and Conclusions 96

REFERENCES 99

APPENDIX A: Poster 110

APPENDIX B: Newspaper articles 112

APPENDIX C: Semi-Structured Guided Interviews 116

LIST OF TABLES

Table	Description	Page
1	Characteristics of 100 Primaparous Mothers	29
2	Categorization of Reasons for Weaning	33
3	Ages of Infants Weaned by Sudden Severance	47
4	Cell Frequencies for Patterns of and Reasons for Weaning	51
5	Contingency Table: Patterns and Reasons for Weaning	52
6	Contingency Table: Patterns of Weaning and Return to Work	53
7	Contingency Table: Reasons for Weaning and Infant Age Group	54
8	Frequencies of Sources Cited by Mothers for Advice on Weaning	56
9	Reasons for Refusals of the Breast	66
10	Feelings of Infants about Weaning	67

LIST OF FIGURES

Figure		Page
1.	Histogram of ages of infants at weaning.	31
2.	Scatter graph of maternal age and duration of breastfeeding.	32

I. INTRODUCTION

In western cultures, breastfeeding is regarded by most people, both professional and lay, with an ambivalent attitude. On the one hand, its benefits are clearly recognized: the biochemical, cellular, and physical composition of breast milk makes it a biologically specific source of nutrients for the infant (American Academy of Pediatrics, 1978; Riordan, 1983; Walker & Watkins, 1985); breast milk contains immunological factors which protect the infant against disease (Welsh & May, 1976); the risk of gastrointestinal illness is reduced (Koopman, Turkish, & Monton, 1985); the physical closeness of breastfeeding may promote the emotional bond between mother and infant (Countryman, 1983); and feeding the infant from the mother's breast is convenient and relatively inexpensive (La Leche League International, 1981). Today, more than 70% of all newborn infants in Canada and the United States are breastfed for the first weeks of life (McNally, Hendricks, & Horowitz, 1985; Yeung, 1983) compared to 22% in 1972 (Koop & Brannon, 1984). Within four months, however, most North American mothers stop breastfeeding their infants (Fieldhouse, 1984; Magnus & Galindo, 1980). A mother's perception that her infant is "fussy," her belief that she is unable to provide sufficient milk for her infant, or mismanagement by health professionals are most frequently cited as causes for this sharp decline in the number of mothers who breastfeed (Hood, Faed, Silva, & Buckfield, 1978; Whichelow, 1982; Wilkinson & Davies, 1978). Others cite abandonment of traditional child care practices and changing societal norms as important factors in this decline (Gussler & Briesemeister, 1980).

Regardless of the reasons that led to her decision, once the mother has decided to terminate breastfeeding, she is faced with the question of *how*. Many mothers, unsure of how to proceed, become anxious about weaning, fearing that the transition to bottle or table food may be a difficult one (Parsons, 1978). Minimizing the trauma associated with weaning is important (Amsel, 1976; Pryor, 1973; Zaslow, 1976). Several authors have offered prescriptive advice on how to wean (Evans & Hansen, 1980; LaCerva, 1981; Riordan, 1983); others have recommended types and amounts of substitute feedings (Bender, 1976; Deacon, 1977).

The process of weaning an infant in North American culture has been poorly documented; no scientific study, qualitative or quantitative, has yet been done. At present, advice on weaning is based on an author's personal preference or individual experience (Moore, 1979). Therefore, the purposes of this study were two-fold: to discover and describe the patterns of weaning, and to discover how mothers acquire the knowledge to wean. Several questions guided this research: Do mothers use available literature to guide the weaning, or do they rely on the advice of other mothers who have had previous experience with weaning? Are there general guidelines for weaning that all mothers can follow? What are the factors that are common in babies who wean easily? Do some infants wean more easily than others? Do patterns of weaning vary by age or sex of the infant and age of the mother?

Such research is important for the nursing profession. Knowledge gleaned from studying mothers who have weaned their infants may lend insight into the reasons why mothers terminate breastfeeding early. As importantly, the information on weaning may be useful for teaching protocols on breastfeeding and weaning.

Definition of Terms

Several terms relevant to the literature of weaning and used throughout this study are defined as follows:

Breastfeeding Mother: the natural or adoptive mother who breastfeeds her child either as a source of nourishment or comfort or both.

Doula: a supportive person whose primary role is to "mother" the new mother and secondarily to relieve the new mother of household tasks so that she may be with her infant (Raphael, 1973).

Gradual Weaning: a pattern of weaning characterized by the step-by-step elimination of breastfeeding with concommitant introduction of substitute feedings, such as formula or solid foods.

Infant: a child during the first 18 to 24 months of life (Mussen, Conger, & Kagan, 1974).

Minimal Breastfeeding (MBF): a pattern of weaning characterized by breastfeeding only once or twice daily for longer than two weeks; mothers do <u>not</u> express breastmilk either to maintain lactation or to relieve breast engorgement.

Sudden Severance: weaning characterized by the abrupt and complete cessation of breastfeeding in one day.

Weaning: the process by which a mother terminates breastfeeding, beginning with her conscious decision to do so and ending when breastfeeding is totally eliminated.

II. REVIEW OF THE LITERATURE

The first step in the survey of the literature was to find the various definitions and connotations of the word "weaning." To clarify further discussion, a definition of weaning for this study was developed. Popular research foci, such as the duration of breastfeeding and factors that contribute to a mother's decision to wean, were reviewed. Weaning was explored from historical and cultural perspectives. Finally, available prescriptive advice on weaning was reviewed from two sources: professional literature and lay literature written specifically for mothers.

Definitions of Weaning

Cole (1979) has identified that a common problem within the breastfeeding literature has been the "fuzziness of terminology" (p. 137). The term, weaning, has been a particular problem (Cole, 1979). Definitions for weaning include the introduction of solid foods (Brown, 1978; Moore, 1979), the physical and/or emotional severance from the the breast (Anderson, 1953; Avery, 1977; Brody, 1956; Dorland's illustrated medical dictionary, 1974; Messenger, 1982; Whitley, 1978), or a gradual process of removing the child from the breast (Amsel, 1976; Cole, 1979; Goldfarb & Tibbetts, 1980; Nau, 1977; Riley & Berney, 1978; Ross, 1981; Taba, 1970). The concept that weaning be regarded as a process is most important (Cole, 1979); however, a major criticism of reported research is the neglect of this concept. Although the ages of weaning and reasons for weaning have been recorded and statistically analyzed, the point in time defined as weaning is vague and left to the reader's estimation.

Do mothers report age of weaning at the onset of weaning, the middle of weaning, or the last time the infant took the breast? Failure to define the time for weaning makes the interpretation and replication of studies on weaning difficult.

To regard weaning as a process requires that its beginning and end be clearly delimited in a study (Cole, 1979). For this study, the onset of weaning was when mothers consciously decided to terminate breastfeeding. Although some have stated that the introduction of solids begins the weaning process, there is not full agreement that this is so. Many personal accounts by mothers who gave their infants mixed feeding — breast milk and other sources of food — are evidence that weaning, a process of consciously removing the child from the breast, had not yet begun (Diamond, 1982; Kadushkin, 1977).

By contrast, some mothers interpreted their children's behavior, such as diminishing interest in breastfeeding and increasing interest in other sources of food, as self-weaning or signs of readiness to wean (Brazelton, 1974; Clarke & Harmon, 1983). Based on the apparent indications of self-weaning, mothers might decide to terminate breastfeeding. It was possible that mothers might resume breastfeeding after weaning. However, the intent of this study was to determine the methods mothers used to wean their infants; even if breastfeeding was resumed, much information on the dynamics of weaning could be gained.

An objective of this study was to describe the process of weaning. From exploring the process of weaning, the intent was to discover the criteria mothers used to consciously begin the weaning process. The end of weaning, to have been weaned, was defined as when the infant no longer took the breast. Therefore the definition of weaning, for this study, was the process that occurs over a period of time which begins with the conscious decision by the mother to terminate breastfeeding and which ends with the termination of breastfeeding.

Duration of Breastfeeding

Although there is an indication that breastfeeding is declining worldwide (Jelliffe & Jelliffe, 1979), the incidence of mothers who breastfeed in the U.S. appears to be sharply increasing (Martinez & Nalezienski, 1979). Promotional campaigns and endorsements have had an impact on the increasing numbers of mothers who breastfeed after delivery (Arango, 1984; Canadian Paediatric Society, 1978; Myres, 1983). In Canada, over 70 percent of infants receive breast milk for the first few weeks of life (McNally et al., 1985; Yeung, 1983). Despite the apparent increase in the incidence of breastfeeding, the number of mothers who actually continue breastfeeding their infants beyond three months is small. Wilkinson and Davies (1978), Magnus and Galindo (1980), Salber, Stitt, and Babbott (1959), Yeung (1983) and Fieldhouse (1984) have confirmed from their studies that the majority of infants were not exclusively breastfed beyond three months and that the introduction of solids had occurred in some infants as early as two weeks.

The introduction of solid foods may contribute to weaning. Physiologically, the intake of solids is more satiating than breast milk, because digestion of solids is slower (McLaren & Burman, 1976). The infant will not want to breastfeed because he is not hungry. Because the frequency of breastfeeding is reduced, there is less stimulus for production of breast milk. This lowered demand for milk results in decreased milk supply (LaCerva, 1981). The final outcome is "premature weaning." However, there is some evidence that the early introduction of solids may not always lead to termination of breastfeeding (Froehlich, 1983; Kadushkin, 1977). Therefore, many other factors may lead to weaning. The following is a discussion of research that has focused on why mothers chose to wean.

Factors Influencing Mother's Decision to Wean

Fussy baby

One common reason mothers give for weaning is that their infants appear fussy, hungry, and cry a great deal (Barrie, 1978; Davies & Thomas, 1976; Hood, Faed, Silva, & Buckfield, 1978; Salber et al., 1959; West, 1980; Wilkinson & Davies, 1978). A mother who perceives her milk to be inadequate, may attribute her infant's crying to hunger. Physicians and nurses may also confirm this assessment and subsequently recommend weaning and formula. However, Wood and Walker-Smith (1981) assert that to satisfy hunger, especially during growth spurts, the frequency of breastfeedings needs to be increased; the treatment should not be to "change the feed," but to change the quantity of milk. A mother needs to be instructed to put her baby to the breast more often during these growth spurts in order to provide more calories, thereby satiating his appetite.

Insufficient milk syndrome

Many researchers who investigated factors associated with early termination of breastfeeding found the most common reason given by mothers for weaning before six months was "insufficient milk" (Avery, 1977; Davies & Thomas, 1976; Goodine & Fried, 1984; Gulick, 1982; Klackenberg & Klackenberg-Larson, 1968; Sjolin, Hofvander, & Hillevik, 1977; Verronen, 1982; West, 1980; Whichelow, 1982). Whichelow's (1982) findings were typical. She found that mothers perceived their milk to be insufficient because their infants appeared hungry after feedings. Although these infants were given prolonged and more frequent feedings, they still were not satisfied. Whichelow (1982) attributed this to the absence of the "let-down" reflex.

Although some have dismissed insufficient milk as a public excuse used by mothers for not breastfeeding (Clayton, Clements, & Finch, 1979; Jones & Belsey, 1977; Newson & Newson, 1962), Gussler and Briesemeister (1980) have put forth the argument that insufficient milk may be a result of the abandonment of traditional infant care practices, the breakdown of extended social networks, and the interference of the let-down reflex.

The theoretical explanation by Gussler and Briesemeister (1980) lends insight and perspective to the problem of insufficient milk that appears to be characteristic of urbanized societies only. Their explanation is important, because it relates the physiological response of the let-down reflex to psychological and sociological influences.

The theory of insufficient milk is enlightening, particularly in identifying the multiple variables that lead mothers to terminate breastfeeding; however, it is only speculation and critical testing of the theory has yet to be done.

Lack of a doula

An insightful explanation by Raphael (1973) of why mothers terminate breastfeeding early is the lack of an experienced person, the doula, to support the breastfeeding mother. The doula's primary role is to assist the new mother "to mother" by providing advice and reassurance on breastfeeding. Secondarily, the doula relieves the new mother of household tasks so that she may focus her attention on her infant (Raphael, 1973). It is the doula's "presence" that "could save the mother's milk" (Raphael, 1973, p. 24). Traditionally, the doula is the mother's mother but could also be her husband, her friends, or even a book (Morse, Harrison, & Williams, in press-b; Raphael, 1973).

Although many authors of breastfeeding literature have adopted Raphael's doula as a requisite to successful breastfeeding (Jelliffe & Jelliffe, 1979; Ladas, 1970), the consequences of the presence or absence of a doula have only been surmised from a comparison and contrast of breastfeeding practices of traditional societies and western industrialized countries. Researchers have not yet critically examined the relationship of the presence of a doula throughout the duration of breastfeeding. The doula, who initially supports a mother's effort to breastfeed, may later be a determinant in a mother's decision to wean (Morse et al., in press-b). Research that has explored the extent of the influence of the doula on the course of breastfeeding and weaning is absent from the literature. Does the doula have a crucial role in a society that values independence, personal achievement, and individualism? As of yet, the doula's influence on the initiation and duration of

breastfeeding is left to speculation; so, too, is her influence on the process of weaning.

"Inconvenient"

Mothers often reported that they terminated breastfeeding because it was inconvenient (Yeung, 1983). In particular, breastfeeding was inconvenient for mothers who wished to return to work (Riordan, 1983; Yeung, 1983). Although women constitute more than 40% of the work force (Statistics Canada, 1976), no provisions or time allotments are available for the mother who wishes to breastfeed her infant or to express and store her milk. Until the workplace provides an atmosphere and environment that is conducive to breastfeeding, working mothers will most likely terminate breastfeeding.

Infant's rejection of the breast

The phenomenon of an infant's rejection of the breast may be an influencing factor on the decision to wean. Brazelton (1974) described three lags in an infant's interest in breastfeeding that coincide with his motor growth and cognitive development. Clarke and Harmon (1983) investigated the phenomenon of infants apparently weaning themselves, confirming Brazelton's (1974) observations. Clarke and Harmon (1983) reported that mothers perceived their infants who were less than one month of age as having self-weaned. Intuitively, these reports appear unlikely. An infant's withdrawal from the breast is not reasonable. From an evolutionary perspective, these authors argue, it is unlikely that one would withdraw from a "primary source of nutrition and secondarily as a source of immunological protection" (p.155).

It is possible that self-weaning may actually be a normal behavior attributed to motor growth and cognitive development which is misinterpreted as an appropriate time to wean. Investigations of self-weaning have not resolved the issue of whether an infant rejects the breast in an effort to wean or is simply distracted by his widening field of interest. How the weaning process is initiated and by whom is left to speculation. Notwithstanding, Brazelton (1974) and Clarke and Harmon (1983) have made initial and important attempts to describe a pattern of weaning.

Influence of nurses and physicians

Many researchers have identified the health professional as a potent contributing factor for early termination of breastfeeding. Postpartum mothers often receive incorrect advice and/or information about breastfeeding (Cole, 1977; Crowder, 1981; Ellis & Hewat, 1983; Hayes, 1981; Shuckla, Forsyth, Anderson, & Marwah, 1972; Whichelow, 1982; Whitley, 1978). As Hood et al. (1978) assert, the health professional is one of the most significant factors in lactation failure. Although professional literature abounds with reports documenting the emotional and nutritional benefits of breastfeeding, the reality is that practical advice on how to breastfeed is very often not given by physicians and nurses. Encouragement to breastfeed is not frequently accompanied with effective support to mothers who are actively breastfeeding. As a result, health professionals may indirectly initiate weaning through withdrawal of support (Morse & Harrison, 1984) and by suggesting formula. Identifying the initiators of weaning and the factors that determine the course of weaning may reveal underlying reasons for the relatively short duration of breastfeeding.

Other related factors

Other significant factors related to weaning from the breast before six months are: a delay of nursing for more than two hours after birth, a primiparous mother, a forceps or cesarean delivery, or the eruption of teeth (Axelson, Kurinij, Sahlroot, & Forman, 1985; Whichelow, 1982). The attitudes of peers can also have a considerable influence on a mother's decision to wean. Exposing one's breasts in public is a social taboo (Jelliffe & Jelliffe, 1979; Jones & Belsey, 1977; Newton & Newton, 1967). Friends, grandparents or others may feel uncomfortable watching a baby nurse. Their comments such as "Is baby getting enough?" or "Baby is too old to nurse" undermine a mother's confidence that she is providing the best nourishment to her infant (Morse et al., in press-b).

Avery (1977) found that peer support is important in a mother's decision to continue breastfeeding. Mothers who no longer receive peer support may continue to

breastfeed in secret. Avery (1977) termed this behavior "closet nursing" (p. 212). Negative comments by peers, grandparents or husband that discourage breastfeeding and encourage weaning may very well be the final determinant in a mother's decision to wean.

Recommended Methods of Weaning

Prescriptive advice on weaning has been based on historical trends, nutritional needs, and an infant's readiness to wean. The term "prescriptive advice" refers to recommendations to mothers on the manner in which weaning is to be conducted. This advice comes from published sources, both professional literature and publications written especially for mothers.

Historical and cultural accounts of weaning

The transition from mother's milk to a variety of foods shared at the family table has been considered momentous in past civilizations. Final weaning was considered a rite of passage, a milestone in one's development that merited celebration. A recorded account of such an occasion is found in the Old Testament: Abraham gave a great feast on the day Isaac was weaned (The Holy Bible, Genesis 21:8).

The method of weaning differs culturally and with current popular opinion. Kendall (1978) and Riordan (1983) cite instances of harsh weaning practices in Iran and ancient Greece. Coating the mother's nipples with bile from a sheep's or cow's gallbladder was reported to be a weaning practice in Iran. In ancient Greece, pepper or mustard was smeared on the mother's nipples. In a public display of weaning, the baby would recoil in rage when he took the breast (Riordan, 1983). In western societies, eating solid foods and drinking from a cup are considered "social accomplishments" for infants (Walker & Watkins, 1985, p. 839).

Early accounts of advice on weaning

Like breastfeeding, the practice of weaning has followed current popular theory or opinion. Seventy years ago, the age considered proper to wean was two to three years.

Since then, the age to wean has decreased to four to six months, and in some accounts weaning has begun at two weeks of age (Grulee, 1923; Raphael, 1973; Wilkinson et al., 1978).

Early in this century, weaning was considered a task that required the "absolute cooperation of mother" (Grulee, 1923, p. 130). Fischer (1903) and Grulee (1923) regarded weaning as a match of wills between a baby and the mother. For example, Fischer (1903) noted that some children are difficult to wean. Children who absolutely refused a bottle were not to be given the breast. Instead, in an effort to sustain life and avoid starvation, rectal feedings were to be given. From his personal experience, he found that an infant accepted a bottle after two days of rectal feedings.

By 1970, an account by Gunther (1970) revealed that forced feedings to encourage baby to wean had been replaced with sedatives. To persuade an "excited baby" to take a bottle, Gunther prescribed a dose (50-300 mg) of chloral hydrate to be given by spoon. The behavior or condition of an "excited baby" were not mentioned.

Management problems with weaning perceived by Fischer (1903), Grulee (1923) and Gunther (1970) and their prescribed solutions suggest that little consideration was given for the psychological effects of weaning. This disregard for the emotional underpinnings of breastfeeding may result in a traumatic weaning for both mother and baby.

Abrupt weaning

Abrupt weaning can be traumatic for a baby and the mother. Culturally, Egyptian mothers abruptly wean their infants (Ragheb & Smith, 1979). The authors did not provide information on the infants' reactions to abrupt weaning. However, they did warn against such methods as being harmful to the infants. In our society, certain medical and social circumstances may necessitate abrupt weaning. However, in usual circumstances, Riordan (1983) and Waletzky (1979) have recommended gradual weaning over months. If a child is abruptly removed from the breast, he may grieve for days. Rage, withdrawal, and

depression in an infant are behaviors that may be attributed to forceful weaning (Riordan, 1983). Amsel (1976), Zaslow (1976), and Pryor (1973) have also theorized that abrupt weaning may be traumatic for an infant. For example, an infant may develop allergies, have difficulty digesting formula, or refuse to take any nourishment. Amsel (1976) asserts that the mother may also suffer a grief reaction if she is told to abruptly wean. Therefore, both the mother and her infant may suffer when breastfeeding is suddenly terminated. In spite of this, the long-term effects resulting from abrupt weaning have not been documented.

Gradual weaning

Gradual weaning is a method used to gently end breastfeeding for both the mother and her baby. Weaning as a gradual process is recommended by many authors (Goldfarb & Tibbetts, 1980; McLaren & Burman, 1976; Parsons, 1978; Riordan, 1983; Wood & Walker-Smith, 1981). Theoretically, gradual weaning should not only reduce the impact of loss that the mother and her baby may experience from termination of breastfeeding but also reduce physical discomforts, such as breast engorgement, for the mother. Great emphasis is placed on the importance of the mother continuing to cuddle and hold her infant during the gradual elimination of breastfeedings (LaCerva, 1981; Kitzinger, 1979; Parsons, 1978). Consideration for the emotional and psychological foundations of breastfeeding is believed to be important for successful weaning. However, the actual pattern of gradual weaning and its benefits have not been systematically documented.

Professional literature: Methods of weaning

From a review of the professional literature, guides to weaning are based on both theoretical behavioral principles — gentle weaning with schedules of the times to omit breastfeedings, the time periods between breastfeedings, and the substitution of omitted breastfeedings with activities — and quasi-analytic principles — the "proper" age at which certain solids are to be introduced. Research on weaning has not explicitly defined weaning as a process, and often regards it as a single event (Cole, 1979); however, publications

written especially for mothers very often regard weaning as a process. Regard for weaning as a process is foremost and, as a result, many authors advise that weaning occur over one to six months (Evans & Hanson, 1980; Goldfarb & Tibbetts, 1980; Heimann, 1977; LaCerva, 1981; Laupas, 1975; Riordan, 1983; Wood & Walker-Smith, 1981).

A controversy in the literature is whether to wean the infant to bottle-feedings (Heimann, 1977; Laupas, 1975; Wood & Walker-Smith, 1981) or to a cup (Deacon, 1977; Kitzinger, 1979; Riordan, 1983). In contrast, the order for the elimination of breastfeedings is agreed upon by many authors. Evans and Hansen (1980), Goldfarb and Tibbetts (1980), Heimann (1977), Kitzinger (1979), LaCerva (1981), and Riordan (1983) recommend that the least favorite breastfeeding be eliminated first and the most favorite breastfeeding last (usually the bedtime feed). LaCerva (1981) acknowledged that the bedtime feed is often difficult to eliminate; however, he advised the mother to allow her baby to cry one or two nights in order to eliminate the bedtime feeding. Conversely, Riordan (1983) advised that if a child should become sick or emotionally upset during weaning, the mother should resume an extra feeding.

The proper age for introducing certain solids was often the main concern of weaning. Deacon (1977) believed that "mothers are often bewildered by the conflicting advice" (p. 166) on the age to wean and the kind and amount of solids to introduce. To clarify the conflicting advice, Deacon (1977) recommended a schedule for weaning based on a plan of introducing solids with the intent of encouraging good eating habits. Except for the instruction to offer a "milk-feed" after solids, exactly how to wean from the breast was not described. Bender (1976) recommended the introduction of solids at four months because the infant needs not only other sources of iron but also to be introduced to new tastes and textures. The recommended age for the introduction of solid foods varied from three to six months of age and was dependent on an infant's individual needs. Paine and Spegiorin (1983) speculated that resistance to weaning may be due to the introduction of solids after six months of age in breastfed infants.

Kitzinger (1979), LaCerva (1981), and Goldfarb and Tibbetts (1980) advised that, as breastfeedings are eliminated, the amount of cuddling and holding of the infant should not also be decreased. Kitzinger (1979) recommended that breastfeedings be substituted with activities such as reading a book or playing. Unlike the others, Kitzinger (1979) distinctly recognized breastfeeding as a pattern; she asserted that a mother should break out of this pattern and provide her baby with a wider field of interest. For example, if the baby asked for the breast, Kitzinger recommended that the mother could say "not now" and offer an enjoyable alternative such as cuddling.

Morse, Harrison, & Prowse (1986) investigated one pattern of breastfeeding, termed minimal breastfeeding (MBF), which is breastfeeding only one or two times daily. These mothers were able to maintain lactation without the need to express milk while absent from their infants. The authors suggested that MBF was a method of "slow weaning."

Although the advice from authors often overlaps, there appears to be a general consensus that weaning and the introduction of solids should be gradual. Much disagreement exists concerning the age at which to begin weaning, the type of solids to be introduced, and the substitution of cup or bottle for the omitted breastfeeding. Because the methods of weaning advised are based on the authors' personal or professional experiences, it is inevitable that there will be variation, inconsistencies and discrepancies in the advice to mothers on how to wean.

Lay literature: Methods of weaning

Breastfeeding literature that was available from local libraries, bookstores and La Leche League, written especially for mothers, was reviewed. Although similar to professional literature, advice in lay literature was primarily based on practical and common sense needs. Mothers were usually advised to gradually wean over several months and were given schedules for the introduction of solids. Particularly emphasized in the lay literature were the signs of an infant's readiness to wean (Kitzinger, 1979; Messenger,

1982).

Spock (1955), in his classic infant-feeding book, was relatively avant-garde in his advice about breastfeeding when the practice of bottle-feeding was fashionable. Mothers were advised not only to breastfeed as long as it satisfied baby but also to give mixed feeding (formula and breast milk) if they did not wish to nurse beyond three months. Mixed feeding was a method of allowing the baby to become accustomed to bottle-feedings. Gradual elimination of breastfeedings over months to prevent digestive and emotional upsets to the infant, elimination of the bedtime feeding last, and slow introduction of solids were also recommended by Anderson (1953), Heslin, Natow, & Raven (1978), La Leche League International (1981), Llewelyn-Jones (1983), Messenger (1982), Pryor (1973), Stanway and Stanway (1978), and White (1983).

Pryor (1973) stated that with gradual weaning "there is no crying, heartbroken child who cannot understand why the dearest person in the world is denying him the thing he wants most" (p. 253). She asserted that mothers can refuse to give the breast to their toddlers if the time or place is not appropriate and assured mothers that they need not feel as if they are rejecting the child when they refuse the breast. Mothers who do not realize that they can refuse the breast may harbor feelings of resentment if breastfeeding is grudgingly continued.

It is important that these mothers not feel guilt when saying say "no" to the child who wants to breastfeed (Kitzinger, 1979; Pryor, 1973. The immeasurable benefits of breastfeeding are expounded in the literature to the extent that a mother may feel that she cannot set limits on her child's demands without untoward psychological harm.

Messenger (1982) and Anderson (1953) approach weaning in terms of the type and amount of solids to be introduced. Messenger (1982) warned that solids should be introduced slowly in order to prevent dehydration. The argument was that too many solids may produce a high renal solute load in the infant, thereby causing dehydration.

In the lay literature there was some disagreement about whether an infant should be weaned to a bottle or a cup. Gradually, an infant older than six months of age was to be weaned to a cup. For a younger infant, the need for sucking was the argument used for weaning to a bottle by Stanway and Stanway (1978), Heslin et al. (1978), and Spock (1955).

The most unstructured advice for weaning was by La Leche League International, an organization responsible for much of the renewed interest in breastfeeding. They approach weaning in a relaxed manner, assuring the mother that the baby will eventually wean (Froehlich, 1977). Because they advocate infant-led weaning, there is not a single method of weaning; instead, weaning is a flexible process that is to be tailored to the growing and changing needs of the child.

Folk methods of weaning

Unusual methods of weaning an infant, such as using bile or bitters on the nipples, were found to be practices of distant and ancient cultures. However little is known about unusual, unconventional or harsh methods of weaning used by today's western women. A study by Morse et al. (1984), conducted in a Canadian city, revealed that some mothers knew of and practiced harsh weaning methods. Mothers reported that splashing cold water on an infant's face during breastfeeding and placing a nailbrush in the mother's bra were ways to discourage the infant from nursing. There is evidently a need to investigate other lay methods of weaning.

Summary

As indicated by Cole (1979), there are problems with the interpretation of the literature. One problem is that there are many different definitions and connotations for the word "weaning." For this study, weaning was defined as the gradual process of removing the child from the breast that begins with the mother's conscious decision to do so. This definition was chosen because of the emphasis placed on the process of weaning

by many authors (Amsel, 1976; Cole, 1979; Goldfarb & Tibbetts, 1980; Nau, 1977; Riley & Berney, 1978; Ross, 1981; Taba, 1970). Additionally, weaning begins with the deliberate attempts by a mother to terminate breastfeeding. As stated previously, solid foods, fluids other than breast milk, and a cup or bottle do not necessarily mean that weaning from breastfeedings has begun.

Previous researchers have focused on the duration of breastfeeding and the reasons mothers give for weaning. However, as previously mentioned, the term weaning is a problem (Cole, 1979). Because weaning is a process, what point in time did researchers use to determine weaning? A critical drawback of studies that have explored the reasons why mothers stop breastfeeding is that the age at which the baby weaned is unclear. When mothers stated that they weaned their infants at six months of age, did they mean the onset of weaning, the middle of weaning, or the last day of weaning? Is the age stated by mothers accurate? Did all mothers use the same point in the weaning process to determine when weaning occurred? The problem of not recognizing that weaning is a gradual process, thereby reporting a vague age at weaning, may be a consequence of the failure to define weaning. A second drawback is that many of the studies were retrospective, because mothers were asked to recall when weaning occurred. Pryor (1973) has stated that weaning can be "so gradual that often a mother cannot remember just exactly when nursing stopped" (p. 253). A method to overcome the problem of asking mothers to recall a past event is to ask them during the process of weaning.

Many factors appear to contribute to weaning. A fussy baby, insufficient milk, the inconvenience, and misinformation and the lack of guidance from nurses and physicians have contributed to a mother's decision to terminate breastfeeding. Gussler and Briesemeister (1980) and Raphael (1973) have argued that the abandonment of traditional child care practices, the breakdown of social networks, the changing roles of women, and the lack of a doula are reasons why western women do not breastfeed.

Prescriptive advice on methods of weaning found in professional and lay literature is based on the authors' personal and professional experiences. Generally, gradual weaning and slow introduction of solids were recommended.

No studies have been found that critically examined the effectiveness of the prescribed methods of weaning. The method that mothers actually used to wean their babies is left to speculation. Did mothers use available literature to guide the weaning, or did they rely on the advice of other mothers who had experienced weaning? Are there general guidelines for weaning that all mothers can follow? Do some babies wean more easily than others? Do patterns of weaning vary by age or sex of the infant? What factors are common in babies who wean easily? Answers to these questions cannot be found in the literature. Therefore the research questions were: How do mothers learn to wean? What are the patterns of weaning?

III. METHODS

In this study, a qualitative research method was utilized to obtain data that described the patterns of weaning and the ways these patterns are learned. Qualitative methods elicit shared beliefs, practices, and behaviors of a group of people (Diers, 1979; LeCompte & Goetz, 1982). Dickoff, James, and Wiedenbach (1968) labeled qualitative research as "factor isolating," a basic level of theory development (p. 420). Diers (1979) stated that this type of research is the first step of measurement and its purposes are to give names to parts of a situation and to identify unnamed variables. Therefore, the objective of qualitative research is the "reconstruction of the phenomena investigated" (LeCompte & Goetz, 1982, p. 54). This chapter is a discussion of the methods by which the process of weaning was delineated. Additionally, measures used to enhance the validity and reliability of the data are discussed.

Data Collection

Instrument

Semi-structured guided telephone interviews with open-ended questions were used to gather data that described the experience of weaning from the mothers' perspectives. The interviews covered the areas of a mother's perceptions of support, her feelings about weaning, how she learned to wean, the pattern of weaning, as well as the infant's response to weaning as perceived by the mother.

Telephone interviews, for this study, were useful for several reasons. Because weaning occurred over a period of time, mothers were interviewed at the onset and the termination of weaning.

Telephone interviews were also convenient for mothers; because mothers were busy and were often unable to schedule an allotment of time for a face-to-face interview, the ease of calling at their convenience made participation in a study less imposing on their schedules. Telephone interviews created a sense of anonymity (Frey, 1983), thereby allowing mothers to feel less inhibited. Field and Morse (1985) stated that people are accustomed to the telephone and thus are inclined to "speak freely" (p. 69). Finally, because a microphone was not visible, mothers did not feel self-concious about tape-recording and the quality of the interviews was improved.

The open-ended questions of the interviews created a conversational atmosphere. As Diers (1979) stated, a conversational atmosphere "creates a sense of spontaneity and also helps build rapport" (p. 256). Mothers were eager to talk about breastfeeding. They willingly described their experiences in detail. In anticipation of participating in the study, many mothers kept detailed records of the process of weaning. Additionally, the semi-structured nature of the interviews allowed the interviewer to probe responses that were brief, vague or ambiguous. Mothers could then clarify or elaborate on their responses.

The first interview required approximately 30 to 40 minutes and was conducted when mothers began weaning. The second interview required approximately 30 minutes and was conducted when mothers had finished weaning their infants. During the period between the first and second interviews, mothers were called monthly for brief updates on the course of weaning. Mothers who used "sudden severance" (e.g., who weaned in one day) were interviewed only once. Approximately two weeks after weaning was finished mothers were called again in order to determine if they had resumed breastfeeding.

Sample

Criteria for selection

Criteria for selection of mothers were primiparity, actively engaged in weaning or immediate completion of weaning. The reasons for these criteria are that mothers who have more than one child may have experience with weaning and information collected from a past experience may not be a valid representation of the current one.

Selection of sample

The method of selection of mothers based on these specific criteria was non-randomized judgment sampling. Judgment sampling is the deliberate selection of subjects, according to their characteristics, for inclusion in a study (Field & Morse, 1985; Williamson, 1981). Honigmann (1970) has put forth the argument that judgment sampling, although it is "non-probability sampling" (p. 267), provides the researcher with informants that are especially knowledgeable about the research topic. The deliberateness with which the researcher chooses the informants insures that the information elicited will be relevant to the area of interest. Additionally, the researcher's primary interest is in the "system of behavior, as opposed to the statistical distributions of the behaviors in a known population" (Honigmann, 1970, p. 272). Mead (1953) asserted that a necessary skill of the researcher conducting a qualitative study is the ability to evaluate informants in terms of being knowledgeable about the area of interest and having the ability to express spontaneous verbal responses. Therefore, mothers were deliberately selected according to the selection criteria.

The stategy used three methods. First, a poster that invited mothers to telephone the researcher when they had initiated weaning was displayed in the clinics of three public health agencies (Appendix A). Second, public health nurses, who visited mothers soon after discharge from hospital, requested that mothers telephone the researcher when they began weaning their infants. Finally, articles describing the weaning study and a request for participants were published in two local newspapers and a nursing newsletter (Appendix

B).

Sample size

The purpose of qualitative research is to understand and describe human phenomena (Morse, in press; Omery, 1983). The intent of this study was not to generalize to other situations, but to describe the weaning process and to discover how mothers learn to wean. Morse (in press) recommends a medium sample size for qualitative studies utilizing semi-structured interviews with open-ended questions. A sample size of 100 mothers was adequate because it allowed for sufficient and quality data about the process of weaning. For example, when only 75 interviews were completed, there were only three cases of weaning by sudden severance. Therefore, I continued to interview more mothers until there were more cases of this type of weaning in order to obtain more information.

Data Analysis

Following each tape-recorded interview, responses to open-ended questions were transcribed onto data forms. These data forms were photocopied; one photocopy was then cut-up and categorized according to the areas and questions of the interviews. The interviews were then content-analyzed (Bogdan & Taylor, 1975; Fox, 1976). For example, questions which were specific to weaning information, such as "When did weaning begin?" and "How did you wean?", were analyzed for recurrent themes, phrases, and patterns. When the information began to be similar and to be repeated, it was apparent that a pattern was developing. As more and more interviews were analyzed, categories were either confirmed or created. After these interviews were content-analyzed, the frequency of each category was counted. These tabulations were necessary for later chi-square analyses.

Validity and Reliability

The methods used to enhance reliability and validity in a research study determine the quality of the study and the nature of the results. For quantitative research, the concern is focused on instruments that generate data. For qualitative research, the concern is focused on the accurate representation of the situation under study (LeCompte & Goetz, 1982).

Content Validity

Content validity refers to the extent to which the questions of the interview can elicit information about the process of weaning. The semi-structured interviews with open-ended questions were subjected to a review by international experts in the field of maternal-child health, nurses who had professional experience with mothers who had breastfed and weaned their children, and mothers who had breastfed and weaned their children. A pretest of the interview was conducted with ten mothers who had weaned their infants before data collection began. Because these questions were developed from a survey of the literature, the purpose of this pretest was to insure that these questions were clear and relevant to breastfeeding mothers. Data from these pretest interviews were analyzed only to evaluate the appropriateness and suitability of the questions. From this analysis, questions were found to be structured clearly and did not contain jargon unique to health professionals.

Validity of the results

Validity of the results, which refers to the accurate representation of the process of weaning, was enhanced by the method of interviewing, the size and selection of the sample, and the technique of data analysis. The method of interviewing was a semi-structured interview with open-ended questions. The validity of data that are obtained from the semi-structured interview is a "medium risk," because participants answer in their own words with "minimal prompting from the investigator" (Morse, in press). Therefore, validity was enhanced because the informant's "meaning" was assured when the interviewer

was able to probe responses. As a result, informants were able to elaborate and clarify responses that were vague or ambiguous. Another measure to enhance the validity was the tape-recording of each interview, thereby preserving raw data. These tape-recordings were transcribed verbatim onto data forms which allowed for the analysis.

The size of the sample (n=100) provided numerous accounts of the process of weaning, insuring adequate sampling of the domain. Patterns of weaning were readily apparent with this medium sample size. Any lesser number would not have provided adequate descriptions of each pattern of weaning. For example, only nine mothers were in the category *sudden severance* (further discussed in the *Results* and *Discussion* chapters). Although these nine cases provided adequate descriptions of this pattern of weaning, a smaller sample size may not have provided these responses.

The selection of the sample was a deliberate strategy to obtain mothers who were in the process of weaning. Participants who were able to describe their experiences in detail and able to reflect on these experiences were considered to be experts on the subject. Additionally, these mothers, in anticipation of their participation in the study and of the second interview, kept records of the process of weaning. Validity was enhanced because these mothers described weaning as it happened.

The technique of data analysis - content-analysis of the interviews - enhanced validity of the results because areas and questions of the interview were carefully analyzed for meaning. Field and Morse (1985) stated that this inductive method of analysis has "high validity" (p. 103) because each passage of the interview is carefully read and analyzed. As each interview was analyzed in this way, significant words, phrases, themes, and concepts were coded in order to categorize them with similar information from other interviews. This coding allowed for cross-comparison of interviews in order to group similar data and to create new categories as needed.

Threats to the validity of the results

There were several threats to the validity of the results. An obvious threat was that the data came from a self-selected group of mothers. Many groups were inadequately sampled, such as mothers who weaned before six weeks; and many groups were not even interviewed, such as mothers who were less than 21 years of age, Cree Indians, or Inuits.

Secondly, there were not any self-reports of methods of weaning that might be judged as socially unacceptable - such as a deliberate week-long absence of mother - or even harmful - such as slapping the infant when he motioned for the breast. Mothers might have feared ramifications if they told the nurse about such methods.

Thirdly, mothers might have been reluctant to provide information that criticized nurses. For example, the obtained data about the kind of advice and support from nurses were favorable. Additionally, because the process of weaning was described only from self-reports, mothers may have ignored feelings or behaviors that did not seem important. Perhaps their desire to be part of the research caused them to provide information that they thought the nurse needed to know.

Reliability

In qualitative research, the method of discovery and describing phenomena precludes exact replication. Because human behavior is never static, the exact replication of any study, regardless of methods and design, is impossible (LeCompte & Goetz, 1982). Thus the reliability of the results refers to the agreement of the descriptions of the process of weaning by other observers. To enhance the reliability of the analysis of data, thereby providing an accurate representation of weaning, several strategies were used. First, tape-recordings and trancriptions of the interviews enhanced the reliability of the results, because the process of weaning could be confirmed by other researchers. Excerpts of verbatim accounts and case studies are in the *Results* chapter in order to substantiate the analysis. Second, the independent generation of some data, such as the phenomenon of social coercion to wean, was supported by previous research. The reliability of this similar

data was enhanced by this cross-comparison to other researcher's findings. Finally, the characteristics of the participants and the methods used to obtain participants are included in this thesis in order to delineate and describe the study population.

Ethical Considerations

The purposes of the study were explained to the mothers before data collection began. Mothers were informed that their participation was voluntary, that they had the right to refuse to answer any question, and that they could withdraw from the study at any time. Before interviewing began, their verbal consent was tape-recorded. The taped verbal consents were then copied onto a tape that contained all of the taped verbal consents. The consent tapes and the tape-recordings and transcriptions of interviews were kept in a separate locked cabinet. All interviews were erased upon completion of the study.

Mothers were assured that neither their names nor their infants' names would be used in the study nor would they be identifiable in the report. Because mothers were <u>not</u> solicited to wean their infants and were instead asked to call the researcher when they began to wean, there was no interference by the researcher on the course of lactation. Furthermore, the researcher did not give advice on the phone. If mothers sought advice or gave erroneous information, they were referred to a public health nurse.

IV. RESULTS

In this chapter, the methods primiparous mothers used to wean their infants are categorized into three distinct patterns. Other major findings are the reasons the mothers gave for weaning, the mothers' perceptions of support during the period of breastfeeding, and the mothers' perceptions of their infants' refusal of the breast.

Characteristics of Participants

Of the one hundred primiparous mothers interviewed by telephone, ninety weaned their infants, while ten continued breastfeeding to the end of the data collection period, which began in February, 1985 and ended in December, 1985. The ten mothers, who continued nursing at the end of the study, were not characteristically different from the other 90 mothers except that they had not finished weaning. The characteristics of this study sample are summarized in Table 1. The mothers were Anglo-Canadian and from the middle class. The mean age of the mothers was 28.55 years (SD=3.77 years). Eighty of the births were normal vaginal deliveries and 20 were by cesarean section.

Prenatally, all mothers attended childbirth classes and 97 had read lay literature concerning breastfeeding. Postnatally, all mothers reported that they were healthy. However, chronic tiredness during the period of breastfeeding was a complaint of 46 mothers. They stated that they experienced increased energy when weaning was finished.

Mothers reported that their infants were healthy, pleasant, and cheerful. It is possible that mothers were unable to describe their infant's nursing behavior because they did not have a basis for comparison.

Table 1

Characteristics of 100 Primaparous Mothers

Characteristic		*n*
Education	Grade 10	2
	High School	55
	University Degree	36
	Graduate Degree	7
Marital status	Married	97
	Single	3
Type of birth	Vaginal	80
	Cesarean section	20
Place of birth	Hospital	98
	Home	2

Duration of Breastfeeding

The study sample was comprised of 91 infants, 40 males and 51 females, who were weaned by the completion of the study. This is greater than 90 because the sample contained one set of twins.

The mean age of infants at the termination of breastfeeding was 9.43 months (SD=6.58, mode=9). No significant difference was found between the mean age at the termination of breastfeeding for females and males ($t = |0.317|$, N.S.). [1] For male infants, the mean age at the termination of breastfeeding was 9.68 months (SD=8.33, mode=6). For female infants, the mean age at the termination of breastfeeding was 9.24 months (SD=4.81, mode=9). There were three ages at which most infants were weaned: 6, 9, and 11 months (see Figure 1). Furthermore, a scatter graph (Figure 2) shows no relationship between maternal age and duration of breastfeeding.

Reasons for Weaning

Many mothers (n=63) had several reasons for weaning. The main reasons for weaning were categorized as *mothers' needs*, *infants' developmental milestones*, and *coercion to wean* (see Table 2).

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[1] The t test is robust when there are violations of normality and homogeneity of variance (Hopkins et al., 1978). Hopkins et al. (1978) argue that when the sizes of the two samples in a t test were greater than 15, "the actual proportion of type I errors (that is, the rejection of a null hypothesis when it is true) was within 1% of the nominal value for both .05 and .01 levels" (p. 256) (the critical t values). Additionally, a type II error (the acceptance of a null hypothesis when it is false) is also unaffected by non-normality. Hopkins et al. (1978) conclude that the "condition of normality can be largely disregarded as prerequisite for using the t-test" (p. 256). Violations of the homogeneity of variances is of "no concern" as long as the larger sample is associated with the larger variance (Hopkins et al., 1978, p. 257). The actual probability of a type I error, when alpha is .05, is less than .05 when the larger variance and larger sample are paired. In this case, this larger sample was paired with the larger variance.

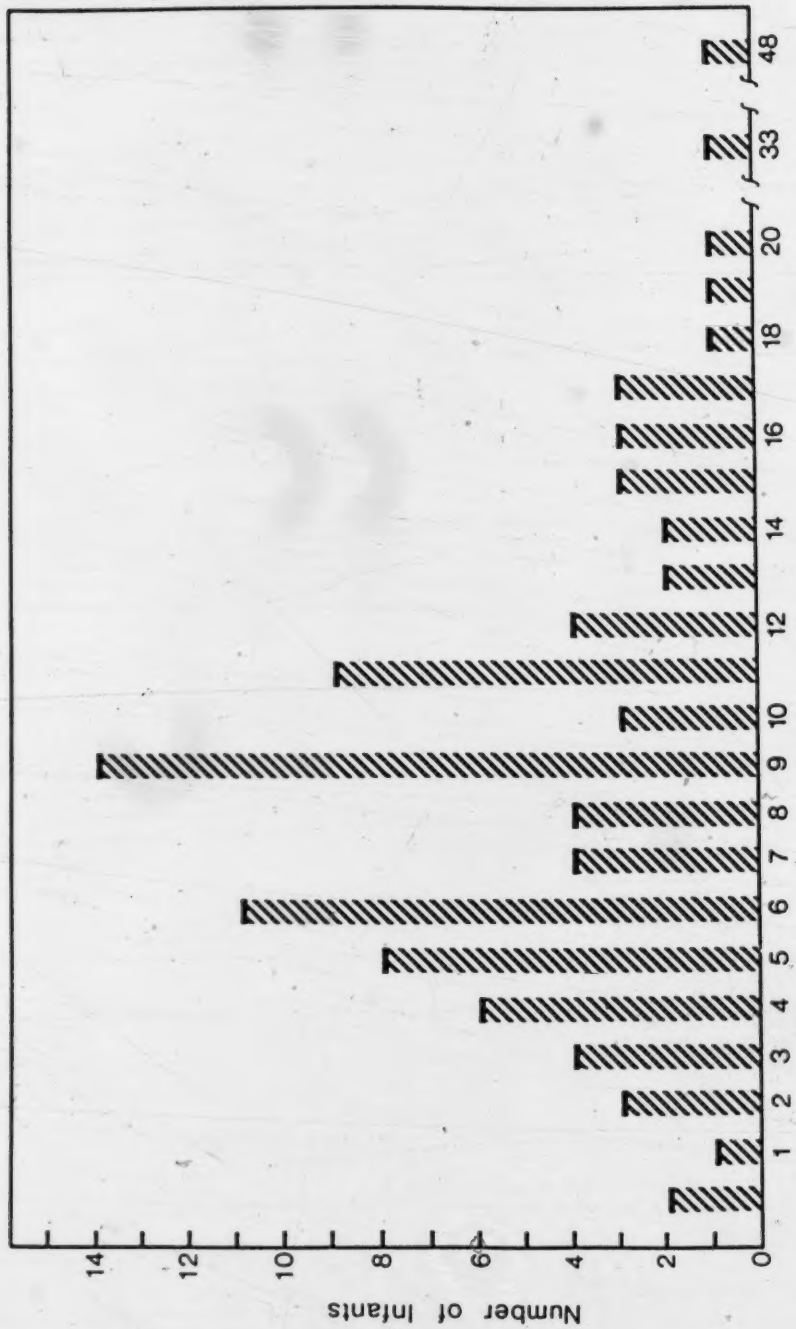

Figure 1. Histogram of ages of infants at weaning.

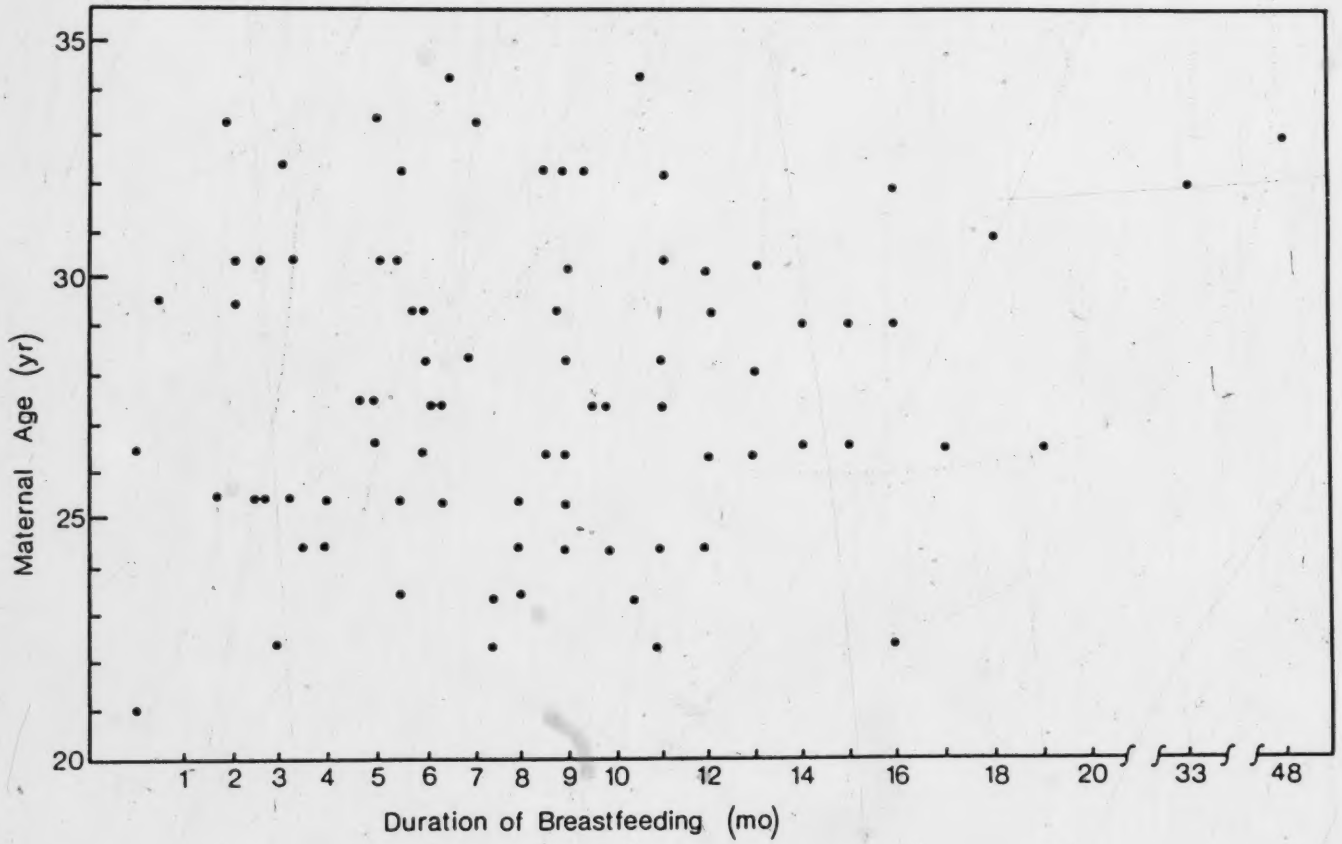

Figure 2. Scatter graph of maternal age and duration of breastfeeding.

Table 2

Categorization of Main Reasons for Weaning

Reason	*n*
Mothers' Needs (total *n*=65)	
Return to work	41
More freedom	9
To have another baby	7
Maternal/infant illness	4
Mother tired	2
Disliked breastfeeding	2
Infants' Developmental Milestones (total *n*=26)	
Teeth	5
"Baby lost interest"	10
"It was time"	11
Coercion to Wean (total *n*=9)	

Note. This table includes the reasons for weaning by 100 primaparous mothers.

Mothers' needs

Most frequently, mothers weaned to meet their own needs. These were a desire for "more freedom," becoming pregnant, planning to have another child, disliking breastfeeding, or a "return to work" (see Table 2). The last reason was the most important because 41% of the mothers weaned to return to work. The modal length of time of maternity leave was four months.

A need for more freedom included a mother's desire to have her infant take a substitute feeding during her absence. One mother said, "I can be away from her for more than three hours now, she will take formula. Now, I don't worry that she will be hungry when I'm gone." Ten mothers stated that their desire for more freedom was a secondary reason for weaning. Within this group, some mothers ($n=5$) expressed a desire "to have my body back." Although they enjoyed breastfeeding, they wished to lose weight, reduce their breast size, and lessen the physical dependence of their infants. These mothers had already breastfed longer than one year.

Two mothers stated that they weaned their infants before four weeks of age because they disliked breastfeeding. The reasons for disliking breastfeeding were the constant physical demands on the mother, the inconvenience of breastfeeding outside the home, the increased largeness of breasts, and the need to wear specific clothing that enabled the mother to breastfeed. For these mothers, breastfeeding was a burden. They both described their infants' behavior as fussy and unsettled.

One of these mothers had undergone psychiatric counseling for post-partum depression. When she came to terms with her dislike of breastfeeding, she immediately changed to bottle-feeding with an immediate relief of the depression. She reported that both she and her infant "felt better." The second mother who disliked breastfeeding reported that her husband and friends "forced her to breastfeed." She stated that she had to defend her desire to bottle-feed. When her husband went on an out-of-town business trip, she weaned her infant.

Infants' developmental milestones

The second main category of reasons for weaning was labeled infants' developmental milestones. Mothers perceived that their infants no longer needed to breastfeed for either nourishment or comfort, based on behavioral indications of a readiness to wean.

A sign of readiness to wean was the infants' ability to obtain adequate fluids from a cup and tolerate solid foods. Additionally, the eruption of teeth or the infants' biting the nipple were indications that it was time to introduce other sources of nourishment. Infants who were more aware of their surroundings were easily distracted during breastfeeding; mothers perceived them to have "lost interest" in breastfeeding. Finally, infants who asked to nurse or unbuttoned or opened their mothers' blouses in efforts to nurse were perceived to have "outgrown" breastfeeding.

Coercion to wean

Nine mothers reported that coercion to wean was their main reason for weaning. The decision to wean was not made by the mother, although she responded to the suggestion of others that breastfeeding was no longer appropriate. One mother reported, "My mother said I better wean her [infant was three months of age] because she [the infant] will get too attached to me." Another mother said, "My husband was supportive, but when she [the infant] was 13 months [of age] he said, 'She's a big girl now.'" It is important to note that 21 mothers stated that they had experienced coercion to wean, although they did not wean because of it.

Patterns of Weaning

Gradual weaning

The first method of weaning, *gradual* weaning, was practiced by 42% (n=38) of the mothers. They gradually weaned their infants (average age was seven months) from total breastfeeding over a period of one to eight weeks. A substitute feeding, such as milk in a cup or bottle and/or solid foods, was slowly introduced.

The first feeding to be eliminated was the mid-morning feeding at approximately 10 a.m. or the late afternoon feeding at approximately 4 p.m. One mother's typical account was as follows, "I cut off one feeding at a time. I started with the morning feeding — 10 a.m. — I just stopped nursing him that time of the day. I waited a week and then I went to the 2 p.m. feeding."

Another mother reported,

> I started weaning her off the morning feeding [at 10 a.m.] onto a cup — I waited over a week. I [tried] weaning in the afternoon, but she started crying, so I ended up nursing her, and then the second day, she drank more from the cup, and I nursed her less. I waited a couple of weeks so to get her used to the idea, then I weaned her off the night-time feeding, and I finally weaned her off the early morning feeding — I put warmed milk in the cup so it wasn't such a drastic change.

These two feedings – mid-morning and late afternoon – were considered by mothers to be the "least favorite" feedings, occurring at a time when the baby was not very hungry. Least favorite feedings were not considered as emotionally important as feedings associated with arousing from or inducing sleep in an infant. Furthermore, these feedings occurred at a quiet time in the day, when the mother was less busy with work or household duties. A period of two to seven days was allowed before another breastfeeding was eliminated. The last feeding to be eliminated was the early morning feeding – when the infant awoke from a night's sleep or the late night feeding – when the infant went to sleep. A mother reported,

"The night-time one [feeding] — the one I was closest to, was the last breastfeeding to be dropped. I held on to the last one." When weaned, infants received formula and/or solid foods; and once mothers terminated breastfeedings, they did not resume for any reason.

Mothers who used gradual weaning techniques usually had a predetermined date by which the weaning was to be finished. One mother reported:

> I am going back to work, so I want to get her on a bottle. I am planning a month ahead. I am planning to start with the early evening feeding then wait a week; then the next week, the afternoon feeding; wait a week... by the fourth week, she will be taking all bottles.

Another mother said:

> I had to go back to work [when the infant was 15 weeks of age]. I had no choice. From day one, she always had a bottle a day. On week ten, I started adding a second bottle a day, so I slowly increased.

Mothers, therefore, managed breastfeeding and weaning to accommodate an anticipated change in the mother-child relationship, the change usually being the absence of the mother. The most common reason given by the mothers ($n=23$) who used gradual weaning was their return to work (this also included mothers who returned to university or were planning a vacation).

Anticipating their return to work, these mothers initiated weaning one to two months before the date of return to work in order to insure that the baby would take the substitute feedings. In addition to being a method that minimized or avoided emotional upset due to the severance from the breast and the absence of the mother, weaning in a gradual manner was also a method for introducing a new way of feeding. Mothers reported, "I first cut out his afternoon feeding and gave him a bottle. Then I waited until he seemed secure; it was approximately a week before I stopped another feeding." "In January, I started giving her bottles once a day in the afternoon, and I would spend time with her and talking with her." Allowing one to two weeks between subsequent elimination

of feedings assured the mother of her infant's acceptance of the substitute feed. "I have to go back to work on July 1 and I thought it [weaning] would take a month to get him on a bottle." "I have to have the baby ready to be on bottles so the babysitter will have no problems."

To facilitate the infants' acceptance of the cup or bottle, mothers allowed their infants to play with the nipple or bottle or cup to accustom them to something else in their mouths. Mothers also put expressed breast milk into a cup or bottle to feed the infants, put extra holes in the nipple of the bottle, and/or encouraged the fathers to give the bottle to the infants. To facilitate the infants' acceptance of formula, the mothers offered a feeding of combined breast milk and formula in a bottle or cup and slowly increased the amount of formula over a period of weeks. Another method of mixed feeding was to decrease the duration of a breastfeeding and increase the amount of solid foods, formula, or juice in a cup after breastfeeding. One mother reported that weaning this way allowed her infant "to learn a new way of satisfying hunger."

The relief bottle

The early introduction of an occasional bottle to an infant was a concern for mothers. Ten mothers gave an occasional bottle, and, of these, seven gave the reason of returning to work for weaning. However, the question of whether an occasional bottle facilitated weaning or interfered with lactation was unresolved. Three mothers who anticipated their return to work introduced a bottle to their infants shortly after birth; seven mothers introduced the occasional bottle when their infants were six to eight weeks of age. One mother reported, "Immediately I started giving her a bottle, at birth, so she would get used to the bottle." Another mother reported, "I had to go back to work [when the baby was 15 weeks old]. From day one, she always had a bottle a day. On week ten, I started adding a second bottle a day — so I slowly just increased."

For mothers who anticipated their absence, such as their return to work, an occasional bottle containing juice or formula did facilitate weaning because it offered the

infant an alternative to breast milk. Additionally, mothers knew that if in their absence their infants became hungry, they could be satisfied. For example, a mother reported,

> I usually gave him a supplementary bottle now and then when I went out. We knew this [return to work] would happen. It [the introduction of juice at three months of age] was for my convenience, so I could leave him for longer periods of time. I also teach classes. I had to be able to go for three hours at a time to be in class.

Some mothers (n =5) who had given an occasional bottle experienced difficult weanings. Although the infants took a bottle with formula, they refused to stop breastfeeding. One mother reported, "I gave the bottle early [at birth], but weaning was unsuccessful — she just didn't want to wean." These mothers found that distraction from breastfeedings and/or involvement of the fathers were more helpful in terminating breastfeeding.

Conversely, three mothers believed that their experience of "difficult weaning" was a result of never having given an occasional bottle. Difficult weaning meant the infant's refusal to take a bottle. Apparently the infant required a period of time to become accustomed to it. One mother reported, "I should have been giving him the bottle all along. Now it [weaning] is quite a problem. He refuses the bottle."

Two mothers found that the occasional bottle interfered with breastfeeding. One mother reported, "It [an occasional bottle] was tormenting and confusing for him." For those infants who had received an occasional bottle, the ages at which weaning was initiated ranged from 3.5 to 9 months. The ease or difficulty of weaning for infants who received an occasional bottle was not related to age.

The following case study highlights the importance of first facilitating the acceptance of the bottle before actual weaning from the breast begins. The infant had to become accustomed to a bottle and then to the flavor and texture of formula. An interesting point is that a relief bottle did not facilitate weaning. Regardless of the infant's

acceptance of an occasional bottle at birth, weaning was difficult.

Case study I

Robin is a 33-year-old biologist, married, and mother of a four-month-old son, Steve. She returned to work after four months of maternity leave. Anticipating her return to work, Robin gave a "relief bottle" every three or four days, beginning when Steve was three weeks old, for the purpose of "getting the baby used to a bottle." When Steve was three months old, Robin decided to wean. She began by offering a bottle at the mid-afternoon feeding. However, she found that Steve now refused to take the bottle. To encourage Steve to accept the bottle, Robin recruited the father and grandmother to assist with feeding, hoping that they could "get him to take it [the bottle]." Unfortunately, that method did not work. Robin persevered and decided to firmly refuse the breast, even though Steve cried for two hours. This strategy proved to be as agonizing for Robin as it was for her infant. So Robin decided to wait a week before attempting weaning again. To facilitate acceptance of the bottle, Robin put apple juice instead of formula in the bottle. This strategy proved useful because Steve now took the bottle. To facilitate acceptance of the formula, Robin put a mixture of formula, apple juice, and breast milk in a bottle. Over the period of a week, Robin "gradually weaned off the breast milk in the mixture, then decreasing the amount of apple juice to zero until he was able to take formula." Once Steve took the formula in a bottle, Robin began to wean from breastfeedings. The first breastfeeding substituted by the bottle was the "lunch nursing." Robin allowed one to two days between subsequent elimination of breastfeedings. Over one week, she had completely weaned Steve off the breast. The very last breastfeeding eliminated was the early morning nursing. Robin stated that the weaning did not cause her discomfort nor did it upset Steve. She reported that Steve accepted the weaning because her strategies allowed for a "weaning onto formula, then weaning from the breast. That way he never got upset."

One case of relactation

One mother who weaned her infant at 11 months of age recounted the "first weaning" of her infant at four months of age. She stated that when her infant was four months of age her mother (the infant's maternal grandmother) "pressured" her to wean. The grandmother said that the infant was becoming too attached to her mother. So the mother weaned onto formula feeding. However, after four days of formula feeding, the mother regretted her decision to wean because of the high cost of formula and instead "unweaned her infant." She stated that she was able to resume total breastfeeding by "reversing weaning" and building up her milk supply. The duration of breastfeeding was extended to 11 months. A follow-up interview two weeks after the infant was weaned at 11 months revealed that the infant was taking only formula in a bottle and had not taken the breast for any reason.

Weaning by minimal breastfeeding

The second type of weaning, *minimal breastfeeding* (MBF) (Morse et al., 1986), was practiced by 49% (n=44) of mothers. Mothers initiated weaning by gradually reducing the number of breastfeedings over a period of six to eight weeks until the infant was only breastfeeding one or two times daily. Again, the first feeding to be substituted or eliminated was the least favorite one, the one when the infant was least hungry. This feeding was usually in the late afternoon or early evening. This pattern of breastfeeding only one or two times daily was maintained longer than two weeks. These mothers did <u>not</u> express milk in order to maintain lactation or relieve engorged breasts. The volume of milk adjusted to the reduced demands of their infants. Mothers reported, "My breasts adjusted." "He was limiting his time on the breast [MBF] and my milk supply was slowly decreasing." Weaning resumed when the one or two breastfeedings per day were finally eliminated. After weaning, the infant did not again breastfeed for any reason.

The mean age at which MBF was initiated was 9.04 months, SD=4.4 months (range 3.5 months to 24 months). The mean length of time MBF was maintained was 3.25

months, *SD*= 4.09 months (range two weeks to two years). The mean length of time working mothers (n=9) practiced MBF was 3.3 months (range two to five months). This figure does not include seven mothers who were minimally breastfeeding their infants at the end of the study.

MBF critically differs from gradual weaning in that weaning stopped when only one or two breastfeedings daily remained. Mothers would breastfeed in the early morning, before a night's sleep, or as a source of comfort for their infants (e.g., if the baby fell and hurt himself). Mothers appeared to enjoy the closeness associated with nursing their infants, such as bringing their babies into their beds in the early morning. Mothers who chose MBF did so in order to lessen the physical dependence of their infants without having to fully relinquish the nursing relationship.

For many mothers, the discovery of MBF came while gradually weaning. As gradual weaning approached only two breastfeedings daily, they gave up their desire to terminate breastfeeding. The impetus to maintain breastfeeding one to two times daily was the mothers' reluctance to terminate the breastfeeding relationship. Mothers discovered that they could gain more freedom or return to work, diminish the physical demands of their infants, and still preserve the physical bond with their infants.

Some mothers (n=5) deliberately planned to slowly wean their infants to only one or two breastfeedings daily. These mothers were content to minimally breastfeed until their infants indicated a willingness to stop breastfeeding. MBF also provided comfort as well as nourishment to the infants. Mothers found that if their infants needed consoling, they would offer the breast. Mothers reported, "Weaning from the morning nursing will be [not] so much for milk, but to be close, especially since she has a hard time waking up. She likes to cuddle and suckle, and I bring her to bed with us." "If it weren't for breastfeeding [nursing only one or two times a day], I don't know how I'd comfort her." "If she is really upset, I nurse her." "He was taking me [nursing] for comfort."

Weaning to a pattern of MBF was either maternal- or infant-led. One mother said that breastfeeding only one or two times daily "was my choice. It [MBF] fits my lifestyle...I can enjoy nursing without being tied down." Another mother said, "I am happy to nurse only once a day. I was tired of breastfeeding full-time because of the general irritation of his [physical] dependence on me. Also, I find that when I nurse him, I get a feeling of great relaxation. It [nursing] is so relaxing." Maternal-led weaning allowed mothers to continue breastfeeding yet not be the sole source of nourishment to their infants. Infant-led weaning was the infant's gradual loss of interest in breastfeeding over time. One mother reported, "She would nurse one or two times a day, and always once or twice at night. The very day she turned 11 months [of age], I tried to nurse her in the morning and she flatly refused — I think she weaned me." Infants who minimally breastfed did so as a source of comfort and assurance of their mothers' presence. Initiating weaning from MBF was either by mother or child. In one case, both the mother and her four-year-old child decided together that breastfeeding would stop.

Therefore, weaning by MBF was a two-stage process. First, weaning began gradually until a pattern of only one or two breastfeedings daily was reached; then a second weaning was resumed when either the infant or the mother wished to terminate breastfeeding. Two mothers' typical accounts of the weaning were: "At 12 months [of age] I started [weaning] by eliminating one feeding at a time over several weeks... The morning and night feedings are left. I started then on a second weaning [at 14 1/2 months of age]."

> I weaned him from nursing during the day when he was 18 months [of age]. Then at 24 months [of age], he weaned to one or two times a day or sometimes one or two times a week. Since then, he would [nurse] for comfort.

Eliminating the last breastfeeding occurred in four ways. The first way was to use distraction, such as taking the infant for a walk or changing the usual place of nursing. For example, if a mother usually brought her baby into bed in the early morning, she stopped this practice and instead got out of bed immediately. One mother reported,

> She likes to cuddle and suckle. I bring her to bed with us. Now my husband will get up with the baby in the morning and keep her occupied, play with her and give her breakfast — just to get her awake, while I do things — so she doesn't associate nursing with coming to bed with us.

The second way was when the infant lost interest and no longer wanted to nurse. One mother reported, "She did it completely on her own. She was only on one nursing, the morning nursing. We'd wake up and she just didn't want to nurse. She wanted to go straight to breakfast, and that was it."

The third way was sudden severance from the last breastfeeding. In this case, a mother would tell the infant that there "was no milk left." Finally, for one mother who terminated MBF after four years, the decision to wean was made by both her and her child. She reported,

> I'd say, "You are getting old and we'll have to find a new way [to comfort]." So we read, and then we have a quick cuddle, and then we turned our backs to each other, because that was the only way we can change it [to stop nursing]. He turned his back so he didn't think about it [to nurse]. And, he was weaned.

Most mothers who began to wean from MBF intended to terminate breastfeeding in a gradual manner, although the transition from breastfeeding to not breastfeeding required considerable effort to encourage the infants to change. In the cases of two mothers, their infants (both aged 17 months) refused to wean. These mothers both reported that they had to "cut him off," and sudden severance from MBF appeared to be their only choice of ending breastfeeding. The first mother's reason for sudden severance was that her child "demanded" to nurse and wanted to increase the number of breastfeedings per day. She reported, "But lately he seemed to want [to nurse] more and more." The second mother's reason for sudden severance from the breast was recurrent mastitis.

Five mothers who used MBF stated that weaning began and ended the same day the last breastfeeding was eliminated. Although these mothers stated that they had gradually

reduced the numbers of breastfeedings, not until their infants stopped nursing once daily did they feel that they were actually weaning. For example, when mothers were asked, "When did weaning begin?", these mothers reported, "Today. I was nursing him only in the morning... Weaning only took one day." One mother reported,

> [Weaning] took only one day. She was down to the morning feeding only — the one she takes the minute she gets up. She required [the morning nursing] not so much because she was hungry, but because she wanted to be held and cuddled. She'd touch my face and suck, which took about 15 minutes, and then she'd get up and play. When my mother came to visit, she went in and woke her up in the morning, and Rachel [the baby] noticed this was different. She got the same cuddles from my mother that she would have gotten from me. My mother then walked her around and diverted Rachel's attention. Really, I had no plans to wean, but the opportunity was there and that was it — she weaned that day.

Weaning began when mothers consciously decided to terminate the nursing relationship. When weaning began and ended the same day, mothers used distraction to terminate breastfeeding, not a substitute feeding. Another example of distraction was, "I used my husband to put her to sleep. He couldn't breastfeed her! I just made sure I wasn't in the room and that was the easiest way to do it."

The following case study is a typical example of the pattern of MBF. Initially, breastfeedings were gradually eliminated until only one or two remained. Then breastfeeding only one or two times daily continued until weaning was resumed. Strategies to wean are also highlighted: at the onset of weaning, breastfeedings were substituted with a cup of juice or milk. To wean from MBF, the mother had to substitute the breastfeedings with an activity in order to distract her infant from wanting to nurse. Additionally, the mother's regard that MBF was not her child's source of nourishment but a source of comfort is an interesting point because it illustrates the emotional aspects of breastfeeding.

Case study II

Susan is 30 years old, married to a graduate student, and has a 13-month-old daughter, Jenny. She has chosen to stay home with her daughter and does not desire paid employment. When Jenny was six months old, Susan decided to initiate weaning because she was chronically tired. To start the weaning, Susan introduced a cup with juice or milk for the mid-morning breastfeeding. By nine months, Jenny was breastfeeding three to four times a day, during the early afternoon and early evening. During the morning and late evening, Jenny took a cup with milk. To eliminate the afternoon breastfeedings, Susan distracted Jenny by taking walks with her. Susan emphasized that although she was deliberately weaning Jenny, she never refused the breast. If Jenny became upset during the day, Susan would nurse her. By ten months, Jenny breastfed only once — in the morning. Susan stated that she enjoyed this nursing because it was "a gentle waking up for both of us; I bring her into bed to nurse." Susan also stated, "I know she gets her nutrition other ways now. Right now, she gets the breast for comfort, really." This pattern of MBF continued until Jenny was 13 months old. To eliminate the last breastfeeding, Susan decided not to bring Jenny into bed with her in the morning. Instead they both "got up out of bed and had breakfast in the kitchen." This strategy worked; at 14 months, Jenny no longer took the breast for any reason.

Sudden severance from the breast

Sudden severance is the third type of weaning and this was practiced by 9% (n=8) of the mothers. These mothers weaned their infants from total breastfeeding in one day. They described this manner of weaning as "cold turkey."

There were two age groups of infants who readily and immediately weaned. One group was less than or equal to two months of age, and the other group was greater than or equal to six months of age (see Table 3). Infants less than two months of age immediately weaned because of the relative ease of obtaining milk from a bottle. Mothers reported, "She took right to the bottle; I cut her off totally." "I went 'cold turkey.' I started and

Table 3

Ages of Infants Weaned by Sudden Severance

≤2 months (n=5)	≥6 months(n=3)
2.5 weeks	6 months
3.0 weeks	7 months
3.5 weeks	7 months
1.5 months	
2.0 months	

finished [weaning] at two months of age. It was immediate; I had to just cut him off." "She took right to the bottle; I cut her off totally. Maybe [she readily accepted the bottle] because she is so young — she went right to the bottle." "She got the milk faster."

One mother of a seven-month-old infant reported, "He weaned right away. I tried to go on alternate feedings, breast—bottle—breast, but he wouldn't have anything to do with a bottle, so I put him on a cup. It went so well I was more shocked than he was — he went straight to a cup." This mother stated that her infant was distracted during breastfeeding and that the bottle "encouraged independence." One mother weaned her seven-month-old infant by sudden severance for fear of his teeth. The infant had refused to take soy milk from a bottle for three to four days. During this period, the mother did not breastfeed but gave only juice and a wide variety of solid foods to her infant. The mother justified this weaning as "a time to get onto something else and learn what it is all about." She reported that her infant cried and was upset at not being able to nurse, and after three days she said, "He is fine and taking formula now." The mothers did experience physical discomforts such as breast engorgement and leaking for seven to ten days. Cold compresses, firm-fitting bras, minimal expression of milk, and reduction in oral fluids were used as relief measures.

Within this category is a type of weaning termed "erratic." One mother reported that after her infant was three-months-old, she "worked up and down" from breastfeeding and bottle-feeding. She would breastfeed or bottle-feed according to her whim. At six months of age, the infant received only formula. Reasons given for feeding the infant in this manner were the mother's emotional upset due to a recent marriage separation and the convenience of allowing the baby to feed alone with a bottle, thereby allowing the mother to rest.

The following case study depicts a newborn infant's immediate acceptance of the bottle. Although the mother intended to wean gradually, she found that her infant's ready acceptance of the bottle did not necessitate a gradual elimination of breastfeedings.

Case study III

Bernice is a 28-year-old mother. She is married and returned to work after three months of maternity leave. When her son, Ben, was three weeks old, Bernice decided to wean in anticipation of her return to work. Bernice asked her pediatrician about the method of weaning and the type of formula suitable for her son. The pediatrician advised gradual weaning over one to two weeks by eliminating one breastfeeding at a time and substituting a bottle of Enfalac. The pediatrician stated the mother would not suffer any discomfort and the infant would not suffer any emotional upset by weaning in this manner. Bernice began weaning by substituting the afternoon feeding with Enfalac. She found that her son readily accepted the bottle and eagerly drank the entire contents. At the next feeding, Bernice simply "mixed up another bottle of formula and he took it again, with no problem. And he takes five ounces with every feeding. Little did I know that he would wean instantly." Bernice suffered with breast engorgement, but was not emotionally upset about her son weaning so quickly. Bernice perceived her son to be "more content" and sleeping longer periods after he was weaned.

Folk methods of weaning

There are reports in the literature about folk methods of weaning in non-western societies (Riordan, 1983). Two incidental findings from this study revealed two methods of harsh weaning. One mother reported that her friend's physician had suggested that to wean an infant, a mother should tie leather straps around her breasts. A second mother who did not participate because she did not meet the sample criteria, reported that if she could not wean her infant gradually, she would place bitters and hot mustard on her nipples. However, from the sample of mothers interviewed, harsh methods of weaning were not used.

Hypothesis Testing of Selected Factors

The frequency for each pattern of weaning and reason for weaning is shown in Table 4. This table includes only the 90 mothers who weaned by the end of the data collection period. Selected factors were tested by chi-square test of association. Patterns of weaning were not related to reasons of weaning. (see Table 5).

Because 41% of the mothers cited 'return to work' as the reason for weaning, this reason was tested for its association to patterns of weaning. To fill the contingency table (see Table 6), all of the other reasons for weaning were combined. A chi-square analysis revealed no association. Reasons for weaning were not associated with two infant age groups, less than or equal to six months of age and greater than six months of age (see Table 7). The reasons for choosing this division of infant ages were that infants at six months of age are usually sitting and able to grasp objects (Mussen et al., 1974; Scipen, Barnard, Chad, Howe, & Phillips, 1975), have usually doubled their birth weight (Scipien et al., 1975), and it is the recommendation by both the *Canadian Paediatric Society* (1979) and the *American Pediatric Society* (1978) that infants receive breast milk until six months of age.

Breastfeeding and the Working Mother

Mothers usually returned to work after four months of maternity leave. A subgroup of mothers (n =11) continued to breastfeed their infants after their return to work. Nine of these working mothers minimally breastfed their infants for an average of 3.3 months. They nursed their infants before work and at bedtime and did not express milk while at work. Because weaning was a gradual adaptation, the volume of milk apparently adjusted to the reduced demands of the infant.

Two of the working mothers expressed milk every four hours and therefore were not MBF. After one month of working, one mother stated that her milk "dried up." The second mother chose to terminate breastfeeding because she said that the expression of milk

Table 4

Cell Frequencies for Patterns of and Reasons for Weaning

Pattern of Weaning	Reasons for Weaning			Row Total
	Mothers' Needs (Return to Work)[a]	Infants' Developmental Milestones	Coercion to Wean	
Gradual	31(23)	6	1	*38*
MBF	24(16)	16	4	*44*
Sudden Severance	7(2)	0	1	*8*
Column Total	*62(41)*	*22*	*6*	*90*

Note. The sample consisted of 90 mothers who weaned their infants by the end of the data collection period.

[a] "Return to Work" is a reason for weaning within the category of *Mothers Needs*

Table 5

Contingency Table: Patterns of and Reasons for Weaning

	Mothers' Needs	Infants' Developmental Milestones	Coercion To Wean	Row Total
Gradual	31	6	1	*38*
MBF	24	16	4	*44*
Sudden severance	7	0	1	*78*
Column total	62	22	6	*90*

Chi-square=8.84 df=4 N.S.

Table 6

Contingency Table: Patterns of Weaning and Return to Work

	Return to Work	All Reasons Combined	Row Total
Gradual	23	15	*38*
MBF	16	28	*44*
Sudden severance	2	6	*8*
Column total	41	49	*90*

Chi-square = 5.12 df = 2 N.S.

Table 7

Contingency Table: Reasons for Weaning and Infant Age Group

	Age ≤6 months	Age >6 months	Row Total
Mothers' needs	28	34	*62*
Infants' development	5	17	*22*
Coercion to wean	1	5	*6*
Column total	34	56	*90*

Chi-square = 4.70 df = 2 N.S.

was "a bother." One mother who breastfed her infant had been absent from her infant for eight days due to an out-of-town business trip. During her absence, she expressed milk in anticipation of breastfeeding her infant upon her return home. However, on return home, she found that her milk supply had depleted despite regular expression of milk.

Introduction of Solids

The mean age of infants at which solid foods were introduced was 4.1 months (SD=1.1, mode=4). For mothers who weaned because of returning to work, the mean age at which solid foods were introduced was 3.7 months (SD=1.1, mode=3). For mothers who weaned for all other reasons combined, the mean age at which solid foods were introduced was 4.39 months SD=1.5, mode=4). There was a statistically significant difference between these two groups of mothers (t test= $|-2.42|$, $p<.05$).

Acquistion of the Knowledge to Wean

Mothers gathered information about weaning from many sources, by reading, consulting with a nurse and/or physician, asking other mothers who had experienced weaning infants, and La Leche League. From this advice, they fashioned weaning to meet their own needs and their infants' needs (see Table 8). One mother stated, "I have done some reading and called some girlfriends...I just decided on a cumulative decision on what everybody said and I tried that out."

Prescriptive advice given by health professionals

Advice given to mothers on "how to wean" reflected the methods used to wean infants. Advice ranged from "cold turkey" to "wean gradually over months." The overall intent was to terminate breastfeeding. However, there were two exceptions: the advice from La Leche League and one public health nurse was to adjust and modify breastfeeding to meet the changing demands of mother as opposed to terminating breastfeeding.

Twenty three mothers reported that nurses advised them to wean in a gradual manner; seven mothers reported that the nurse recommended introducing the substitute

Table 8

Frequencies of Sources Cited by Mothers for Advice on Weaning

Source	Frequency [a]
Experienced mothers	48
Lay literature	44
Registered nurse	23
Physician	23
La Leche League	17
Dietitian	3

[a]The total frequency is greater than 100 due to multiple sources cited by some participants.

feeding when the infant was most hungry. However, mothers did not do this because this feeding was usually in the early morning feeding when baby awoke. This was not an ideal time for mothers to begin weaning, because infants wanted to have their hunger immediately satisfied and it prevented mothers from bringing their infants to bed to nurse. Because mothers did not have to get up and warm a bottle, they were able to gain an extra hour of sleep by nursing their infants in bed.

Fourteen mothers reported that pediatricians advised gradual weaning by introducing a bottle a day. For example, mothers reported, "The pediatrician said to start weaning about two months before I [the mother] want to finish [breastfeeding]" and "wean gradually, introduce a bottle every three to four days."

Three mothers reported that physicians, who were not pediatricians, suggested "cold turkey" as a method of terminating breastfeeding. Mothers stated, "The doctor suggested I wean...take him off right away," and "The doctor said 'cold turkey.'" Mothers appeared reluctant to wean "cold turkey" as advised by these physicians. One mother consulted a public health nurse who recommended weaning gradually. The mother reported, "If I did it 'cold turkey,' it would be harder on me." Suggestions from one physician also dissuaded a mother from breast and bottle-feeding. "The doctor said one or the other [breast or bottle] but not both. He recommended Similac."

Two mothers reported that their own mothers and mothers-in-law suggested "dry-up-pills." "My mother-in-law said, 'Oh, get the pills.'" These mothers requested such medication from their physicians. However, the physicians did not regard "drying up the milk" as a suitable weaning method, and instead recommended gradual weaning.

Suggestions for weaning from La Leche League and one public health nurse to two mothers who were returning to work differed ~~in~~ that the advice to wean was not to terminate breastfeeding but to modify breastfeeding patterns. A mother stated, "I spoke to the nurse at the health unit. She said I could do this [breastfeeding] part-time, give the bottle and breast. She said I wouldn't have any problems adjusting." This is a significant

finding, because this mother was advised to adapt her breastfeeding pattern to suit her life and her needs. Mothers were told that they could breastfeed only one or two times daily without the expression of milk.

Overall, mothers were not taught MBF or had it suggested to them. How did mothers know that they could breastfeed one to two times daily without expressing milk? The most frequent response was, "I figured it out. It was common sense. After all, breastfeeding is supply and demand...I lowered the demand and the supply went down; my breasts adjusted."

A significant finding is that all mothers who practiced MBF assumed that breastfeeding only one or two times daily was possible. They applied the principle of supply and demand to weaning and thereby assumed that milk supply would adjust to a decreased demand. Mothers neither read about MBF nor were advised by health professionals that MBF was an alternative to total breastfeedings. However, they had sought and read information on breastfeeding and weaning, and therefore, were knowledgeable about the principle of supply and demand in the production of milk. For example, one mother who applied the principle of supply and demand and minimally breastfed expressed dismay at her friend who breastfed only twice a day, but continued, unnecessarily, to express milk every four hours, even during the night. Conversely, another participant in the study who was unaware of MBF and had gradually weaned her infant, expressed a desire that she would have liked to have breastfed her infant before bedtime, but she had not believed it was physically possible.

Mothers' Perceptions of Support for Breastfeeding

Data obtained from this study showed that many people assumed the role of doula during a mother's course of lactation. Mothers (n=96) reported that during their hospital stay, nurses and doctors were very supportive of breastfeeding. When they arrived home, mothers most frequently reported that their husbands were of most help and support

(n=85). Next, a mother's mother and mother-in-law (n=30) were cited to be helpful. Mothers described support as, "He stayed up with me when she was fussy," "...gave me that extra boost...she gave me that support to stick with it," and "...she [the mother-in-law] was very supportive. In fact she said 'Oh, the baby is doing so well on your milk.'"

As the duration of breastfeeding increased to three months, mothers perceived that support for breastfeeding waned. If the baby exhibited fussiness or colicky behaviors, well-meaning advice from others (such as the husband, mother's mother or mother-in-law) undermined a mother's efforts to breastfeed. Comments were overt and suggestive of the mother not having enough milk or eating the wrong foods. Mothers reported, "He [the husband] knew I enjoyed it, but he [the baby] had colic and I had to feed him every three hours. He [the husband] thought I didn't have enough milk. I know that wasn't right." "Oh, Sally, the baby is so gassy. What did you do to him?"

Support from physicians was conflicting: if a mother expressed a concern over her baby's health, the medical advice was to introduce formula. Mothers reported, "He [the pediatrician] was very supportive [about breastfeeding], but he gave me an alternative to breastfeeding," "I don't think physicians support breastfeeding as much as they should. They say 'You should do it,' but then they promote formula." "Do it [breastfeeding] if you want. I [the doctor] don't see the point in it", and "They [pediatricians] say they support breastfeeding, but when the baby had a cold, they told me to give Pedialyte for 24 hours instead of breast milk."

> I called the doctor because the twins (three months of age) went "bananas" at the 8 p.m. feeding. I thought maybe my milk wasn't as plenty and the doctor said that was it — and that is when I put them on a bottle.

A mother's perception of support for breastfeeding appeared to be associated with the age of the infant. Mothers reported that their husbands, friends, parents and parents-in-law were supportive for the first three to six months and that they considered

breastfeeding healthy for the baby.

> Up to a point, she [mother-in-law] was supportive. I believe she felt I should have the baby weaned by six months [of age]. Two months ago [when the baby was 11 months of age], she said 'Well, now that you have the baby weaned...' and I said 'What?' and I just let it go.

"She is supportive [mother's mother] but thought three to four months [of age] was enough." Mothers reported that as breastfeeding continued beyond six months, they received criticisms. "The older the baby got, more people commented on it [breastfeeding]." "Some were negative about the length of time I breastfed [seven months]. They'd ask me when I was weaning — it may have influenced my decision [to wean] somewhat." As the baby reached 9 to 12 months of age, perceived support diminished and those who had previously been supportive now began to withdraw support by not saying anything about the breastfeeding. One mother stated, "No one is saying too much."

As breastfeeding continued past the infant's first birthday, overt comments against breastfeeding were directed to the mother. At this point, the mother ceased to defend her practice of breastfeeding and began to keep it a secret. One mother reported, "When the baby started getting big, around nine months [of age], people started saying things to me. My mother said 'Get that baby off your breast!' Now at 18 months [of age], I hide it [breastfeeding]." A second mother reported, "Nursing is something we do in this home. No one else needs to know." A third mother reported, "I knew if I continued breastfeeding past a year, I would get criticisms. But my mother thinks a year is enough...She said, 'Maybe you should use supplementary bottles.'" When mothers perceived support to wane, they began to seek support and/or avoided the source of discouragement. Mothers who sought support had infants older than six months of age. They needed affirmation that breastfeeding was appropriate. One mother reported, "When I questioned whether I was doing the right thing — breastfeeding this long — I would call La Leche League; they were a great support." Another mother reported,

> Friends and older women would say "Why don't you give the bottle"...I just ignored those comments...Going to the clinic [Public Health Unit], I felt more confident. I knew what to do but just needed someone to repeat it to me.

Mothers were asked how the person who was most supportive about breastfeeding felt about weaning the infant. Generally, the response was that this person was supportive of the mother's decision to wean. However, some mothers (n=23) reported that the person who was supportive of breastfeeding began to express relief at her decision to wean. One mother reported that her own mother was relieved when the baby was weaning. "She [the mother's mother] was glad to hear that I was giving her bottles...She never could believe the baby was getting enough from me." Another mother reported that her husband was "glad to see" weaning was initiated. Mothers explained the pressure to wean as the grandparents' and husband's desire to participate in the infant feeding.

The doula's role, therefore, was twofold: as a source of support to the breastfeeding mother and as a "facilitator of weaning" (Morse et al., in press-b). This dual role placed the responsibility of the course of lactation, initiation, continuation and termination on the doula. When the doula perceived that breastfeeding was no longer necessary, he/she began to withdraw support and urge weaning. Mothers perceived the supportive person to believe that breastfeeding was no longer appropriate for the infant. Withdrawal of support by the doula was prompted by the infant's fussy behavior, loss of a newborn appearance, and/or the infant's cognitive development.

The mother's determination to breastfeed helped to protect her from coercion to wean. Avoiding sources of discouragement and seeking other sources of support steadied the course of lactation. However, in this study, the doula was most frequently the husband. When the husband withdrew his support of the mother's decision to breastfeed, the infant was weaned.

Conversely, in this study, two mothers reported that they had experienced pressure to breastfeed. The mothers stated that they had had to defend their choice to feed their

infants with formula.

The following case study illustrates the theory of social coercion to wean and the influence of the doula on the course of lactation. Regardless of the mother's deep commitment and desire to maintain a nursing relationship with her child, she weaned in the absence of her husband's support. Therefore, the primacy of support is fundamental — not only to the initiation of breastfeeding but also the duration and course of lactation.

Case study IV

Patty is a 28-year-old university graduate, married to a lawyer, and mother of a 2 1/2-year-old daughter. She described herself as successful at breastfeeding and boasted about how she has breastfed her child, Laura, for 2 1/2 years. Laura was taking a wide variety of foods and breastfed only two times a day (MBF). Patty reported that Jim, her husband, had always praised her for her determination to breastfeed a toddler despite an overwhelming negative response from friends and, more significantly, from her parents-in-law. She stated that she did not receive any support in her decision to breastfeed and that she felt no need to participate in self-help groups designed to support breastfeeding mothers. However, by Laura's third birthday, Jim began to voice concerns that Laura was "still nursing." His concerns were prompted by his parents' desire to visit over the Christmas holidays. Patty, however, was more determined than ever to continue nursing. She described Laura as a very outgoing, cheerful and confident child, and attributed these behaviors to a close and secure mother-child relationship. Nevertheless, as the Christmas season approached, Jim told Patty that he would be embarrassed to have his parents visit while Laura was "still nursing." One week before Jim's parents visited, Patty weaned Laura.

Mothers' Expectations of Breastfeeding

Mothers were asked if their breastfeeding experiences were similar to what they expected. That breastfeeding was a "pleasant and natural" experience was reported by 63%

of the mothers. They stated that breastfeeding "was even better than I thought." "It was so natural." One mother, who nursed her son for four years, said, "[Nursing] makes me feel *mum*sy, really close. I enjoy being able to give him something special." Some mothers (n=17) did not expect the pain they experienced during breastfeeding and were disappointed that breastfeeding was "not a natural experience." They had not expected that the techniques of putting the baby to the breast would not be spontaneous. Reports were similar to these quotations: "No, I didn't expect the pain; I thought it [breastfeeding] would be so natural." "I thought breastfeeding would come naturally." "Little did I know that we [mother and infant] needed to learn how to breastfeed." Mothers (n=8) who were indifferent or neutral towards breastfeeding accepted it as a part of child care. One mother stated that "breastfeeding was not Nirvana." The expectation that breastfeeding would be special was not fulfilled.

Other mothers (n=10) stated that they had no preconceptions or expectations of what the breastfeeding experience would be like. Therefore, they did not have any expectations. Two mothers stated that they did not enjoy breastfeeding. One said, "I was leery about breastfeeding." No association emerged in terms of a mother's expectations about breastfeeding and the duration of breastfeeding, reasons for weaning, or methods of weaning.

Mothers' Feelings about Weaning

The mothers' responses to weaning their babies were classified into three categories: acceptance, ambivalence and feelings of loss.

Acceptance

Thirty mothers accepted the weaning as a matter of course or expressed relief when breastfeeding was finished. They stated that they were "happy with the way things are going" and "I am looking forward to it."

Ambivalence

Twenty-four mothers had "mixed feelings" about the weaning. Although they were eager to have more freedom, they were reluctant to relinquish the breastfeeding relationship: "On one hand [I] want more freedom and then on the other hand not letting go completely."

Feelings of loss

Thirty-four mothers expressed sadness and feelings of loss about weaning. Typical responses were "I will miss the baby needing me", and "Sorry, because it [breastfeeding] is really close."

No pattern emerged from the phenomena of maternal-led and infant-led weaning and mothers' feelings about the weaning. Three mothers who initiated *gradual* weaning were "devastated and hurt" when their infants who were less than three months old readily and immediately accepted a bottle and subsequently refused to breastfeed. They perceived their infants to prefer the bottle to the breast. As one mother reported, "He is happier with the bottle."

The mean ages of infants within these three categories was ten months of age. However, age ranges differed. For categories "feelings of loss" and "acceptance," ages ranged from less than one month to greater than one year. For the category "ambivalence," ages ranged from five months to greater than one year. However, association testing between infant age groups, less than or equal to six months and greater than six months and categories of mothers' feelings revealed no significant difference [$X^2(2, n=85) = .5$, N.S.].

Infants' Refusal of the Breast

Mothers were asked if their infants ever appeared to refuse the breast. From 100 responses, 55 mothers stated that their infants had refused the breast at some time. However, in 51 cases, clarification of the "yes" response revealed that refusal of the breast

by the infant did not indicate self-weaning. As shown in Table 9, mothers described normal infant behaviors that resulted in their infants' refusing the breast.

For the seventh reason, self-weaning, four mothers found that their infants preferred certain situations in which to nurse. One infant, who was 16 months of age, refused to nurse in social situations and would say "no" if her mother attempted to nurse the infant. Another infant preferred one breast to the other, a behavior attributed by the mother to be due to a more comfortable holding position. Another mother reported that her infant, nine months of age, refused to nurse for 36 hours. She attributed her infant's "nursing strike" to an "episode of biting and teething." When the infant bit, the mother reacted to the pain and she therefore concluded that her infant associated his nursing with having hurt his mother.

Mothers' Perceptions of their Infants' Feelings about Weaning

Mothers were asked how their infants felt about weaning and whether any change in infant behavior occurred during the weaning. As shown in Table 10, there were five categories of responses, ranging from acceptance to "hysterical."

Mothers reported that if the infant became upset due to weaning, they would "nurse the baby for comfort" or try to distract him/her in efforts to minimize upsets and discomforts. Typical accounts were "If she got cranky, I would breastfeed. I wasn't on a rigid schedule and [I] did what the baby wanted," and "She'd make eye contact with me. I knew exactly what she wanted — I right away got her a toy to play with or got her a drink of water or juice."

Summary

The study sample consisted of 100 mothers, of whom 90 had completely weaned their infants by the end of the data collection period. Variables such as maternal age, sex of infant, and type of birth delivery were not related to the duration of breastfeeding. Three patterns of weaning were delineated: gradual, weaning by minimal breastfeeding, and

Table 9

Reasons for Refusal of the Breast

Reason	*n*	Quote
Increased cognition	14	"He is more easily distracted now. When he nurses, he looks around."
		"He associates nursing with sleeping. When he wants to play, he won't nurse."
Satiety	12	"He often refuses to nurse, but he never refuses [the breast] when he is hungry."
		"Yes, he refuses when he is full [not hungry]."
Ease of bottle-feeding	9	"He thought it [breastfeeding] was too much work."
		"It [the bottle] is easier for him. He doesn't have to work as much."
Immaturity to suckle	7	"He had to learn how to nurse."
		"She just wasn't strong enough."
Gastric distention	5	"He tosses his head back and forth; I knew he had gas."
		(When this infant was burped, he continued nursing.)
Nasal congestion	4	"When he was stuffy, he was really hard to nurse."
Self-weaning	4	(see text)

Table 10

Feelings of Infants about Weaning

Feeling	*n*	Quote
Acceptance	70	"The baby didn't notice."
Preferred the Breast	11	"He prefers the breast, but takes the bottle."
Cranky and Fussy	10	"He was a bit fussy...when he was whiney, I tried to distract him."
Less Fussy	5	"The formula holds him longer. He can go for four hours between feedings instead of two-and-a-half hours."
Hysterical	4	"He gets hysterical when I cut down [the number of breastfeedings]."
		"He throws a tantrum over the bottle."

sudden severance. Reasons for weaning were categorized as "mothers' needs," "infants' developmental milestones," and "coercion to wean." The commonest reason for weaning was a mother's return to work. Mothers usually returned to work after four months of maternity leave. Coercion to wean was experienced by thirty mothers, and nine of these cited it as their primary reason for weaning. A feeling of loss was experienced by 34 mothers upon the completion of weaning. However, no pattern emerged between feelings of loss and age of infant. Patterns of weaning and reasons for weaning were unrelated. The introduction of solid foods was significantly earlier for mothers who returned to work than for those who did not.

Mothers' perceptions of support for breastfeeding were inversely related to their infants' ages. As infants continued to breastfeed past one year, mothers began to keep it a secret. The doula had a dual role: as a source of support in the decision to breastfeed and in the initiation of lactation, and as a facilitator of weaning. When the doula no longer regarded breastfeeding as appropriate for the infant, he/she urged weaning. The doula was most often the husband.

The phenomenon of an infant's refusal of the breast was elucidated. Many mothers (n= 51) did not perceive their infants' refusal of the breast as rejection or as self-weaning but rather as a normal reaction to immaturity to suckle, satiety, gastric distention, nasal congestion, cognitive development, and bottle-preference.

V. DISCUSSION

In this chapter, the process of weaning is discussed, preceded by an appraisal of the research methods and the limitations of the study. Arguments are presented to justify the study despite obvious limitations, such as self-selection of participants. The discussion focuses on the congruency of the patterns of weaning with the advice found in professional and lay literature and on the relatively long duration of breastfeeding for this group of mothers and their reasons for weaning. Finally, the practical implications of the study for nursing practice are discussed, as are recommendations for future research.

Discussion of the Research Methods

Research on weaning is relatively young; delineating its components is an essential first step in understanding the process of weaning. Semi-structured interviews were ideal for identifying patterns of weaning and the social influences which affected a mother's course of lactation because mothers freely described their experiences and perceptions of support. The inductive nature of the interviews yielded clues to emerging patterns and common experiences of weaning mothers. As more data were collected, patterns and themes of the experience of weaning emerged. Because of the freedom allowed by semi-structured interviews, verification of recurring themes and patterns was possible. Additional questioning, made permissible by a flexible interview schedule, elucidated patterns of weaning and social support.

Questions which focused on infant personality and infant nursing behavior did not lend information to the phenomenon of weaning. All infants were described as cheerful, happy and pleasant. Mothers did not know how to describe nursing behavior, because they did not have a referent with which to compare infant nursing behavior.

Conducting telephone interviews was convenient for mothers. For example, they were able to call during their infants' naps or were able to nurse while on the phone. Also mothers felt comfortable on the phone. Interviews by telephone gave mothers a sense of anonymity because they were not face-to-face with the interviewer. one mother stated, "I am at ease on the phone; I don't feel inhibited."

As stated, the group of mothers interviewed was self-selected and therefore were atypical of the general population. Mothers were very interested in the care of their children, infant feeding, and providing information for the purpose of research. They felt that other mothers would benefit from their information. Because of high motivation, mothers eagerly shared their experiences. Anticipating their participation in the weaning study, many mothers kept detailed records of the weaning.

The strategy to obtain mothers by posting advertisements in public health units proved to be unsuccessful. Only 41 mothers participated in the study after four months of poster distribution in health units. One reason for the sluggish solicitation of subjects was a strike by nurses in two of the three participating public health agencies. A second reason was that a mother's decision to wean may have not coincided with the usual times that she would have visited the public health clinic (e.g., mothers usually visit when their infants require immunizations at two, four, and six months of age).

To obtain the proposed 100 primiparous mothers with regard to time and cost efficiency, short articles describing the weaning study and requests for participants were published in two local newspapers and one nursing newsletter (Appendix B). This strategy proved to be overwhelmingly successful. Within two weeks, over 400 mothers called to participate in the study. Although many mothers who called did not fit the sample criteria,

the sample of mothers was easily obtained. Mothers who were interviewed at the initiation of weaning were called every month until either weaning was completed or until the data collection period ended. Updates on the status of the course of weaning were possible by brief monthly telephone calls. Also revealed was that the phenomenon of MBF was more easily delineated by following the progression of weaning on a monthly basis.

The size of the sample, 100, was adequate. Because of this medium sample size, categories were saturated with data. A lesser number of participants would not have allowed patterns to emerge, because categories would have been obscure. Because only primiparous mothers were interviewed, their experiences of weaning were not influenced by personal experience with with infant feeding.

Limitations of the Study

There are several limitations to the study. The first is that the sample of mothers was atypical of the general population of primiparous mothers. These mothers were highly educated and socio-economically advantaged. As such, the results of the study are limited to populations that have similar characteristics.

A second limitation was that the sampling was disproportionate. In the sample studied, there were many mothers who weaned after six months but few before six weeks. This was known to be a limitation because there were reports that the number of mothers who initiated breastfeeding in the hospital rapidly declined soon after discharge (Fieldhouse, 1984; Yeung, 1983). Perhaps mothers who weaned before six weeks were unaware of the study. Although, in Edmonton, public health nurses visit mothers by the fourteenth day postpartum, some public health nurses may be unsure about broaching the subject of weaning to mothers who were establishing lactation for the first time. Nurses may have feared that they might initiate weaning if they told mothers about the study. It is also possible that mothers did not regard switching the infant to formula so early in the course of lactation as weaning. Also, mothers may not visit the public health unit until

their infants require the first immunization at two months of age.

Only two mothers stated that they weaned because they disliked breastfeeding. These two mothers were eager and willing to be interviewed. They felt that they had been pressured to breastfeed and that breastfeeding attributed to both their own and their infants' unhappiness. Perhaps mothers who weaned before eight weeks felt they had to defend their desire and choice to bottle-feed, or they felt they had failed in some way.

Confronting new mothers in postpartum wards about participating in a research study presents a dilemma. For the new mother, the primacy of support and encouragement in the establishment of lactation could have been undermined by invitations to participate in a weaning study. A solution would be to begin interviews with mothers prenatally and then follow-up the progress of breastfeeding for at least two months.

A third limitation was that native Canadians or other cultural groups did not participate; therefore, their methods of weaning are unknown. Mothers also did not report their use of folk methods of weaning, although it is known that mothers were aware of these practices (Morse & Harrison, 1984). A possible reason why unusual or folk methods of weaning were not reported is that mothers may have been reluctant to tell of such practices for fear of disapproval from the interviewer.

Finally, a fourth limitation is that the information on the health professionals' support and teaching came only from mothers' self-reports. Although there may be disagreement between what the health professional actually said and what the mother heard, it is nonetheless important to know how the mother perceives support and teaching from nurses and physicians. Further study on weaning should include interviews with health professionals on the kind of information they give to mothers.

These limitations of the study do not detract from its importance. The study is an initial step in the research on weaning and, as such, it is reasonable and prudent to begin a new area of investigation with a sample of mothers who are willing to describe their experiences. Identifying voids in the research and biased results indicate that further

research is needed. Further investigations will confirm, supplement, or refute these findings.

Duration of Breastfeeding

The age of weaning, or duration of breastfeeding, was higher than the ages reported in recent Canadian (Clark & Beal, 1982; Fieldhouse 1984), American (Whitley, 1978), English (Davies & Thomas, 1976), and New Zealand (Hood et al., 1978) studies. Although maternal age (Clark & Beal, 1982; Fieldhouse, 1984) and the experience of a cesarean birth (Ellis & Hewat, 1984) have been reported to affect the duration of breastfeeding, I did not find this relationship. Additionally, researchers who reported a high maternal age, similar to this study, also found no relationship between duration of breastfeeding and maternal age (Ekwo, Dusdieker, & Seals, 1984; Goodine and Fried, 1984; Maclean et al., 1985).

There are several reasons for the relatively long duration of breastfeeding for these mothers. First, the doula-role for the majority of these mothers was assumed by their husbands. These mothers received encouragement and praise for breastfeeding their infants. If they began to experience coercion to wean from people other than their husbands, their strong commitment to breastfeeding motivated them to avoid those who were not supportive and to seek support from the La Leche League or a public health unit.

Secondly, this strong commitment to breastfeeding may have attracted them to participate in weaning research. Maclean et al. (1985) also found in their breastfeeding study that mothers who had a strong commitment to breastfeeding were eager to participate in research. As a result, they also reported a long duration of breastfeeding.

Thirdly, the majority of these mothers did not return to work and therefore did not have to prematurely wean for this reason. Not having to cope with the conflict of paid employment, these mothers had different external influences for their decisions to breastfeed and wean.

Finally, the most important reason for this relatively long duration of breastfeeding was that most of these mothers found that they could minimally breastfeed. Mothers were able to enjoy the emotional aspects of breastfeeding while significantly reducing the physical demands of their infants. Mothers modified breastfeeding to fit their own and their infants' needs. For example, the mothers who minimally breastfed gained more freedom: they did not need to worry about breastfeeding when away from home because their infants took a substitute. As a result, breastfeeding did not make them feel "tied down."

Signs of readiness to wean

It appears that distinctive growth and developmental changes at 6, 9, and 11 months of age explain the increased numbers of infants weaned at these times. This finding supports arguments by Brazelton (1974) and Clarke and Harmon (1983) that the age of weaning is associated with growth and developmental spurts which occur at four to six months of age, and at 9 to 12 months of age. Although development varies individually, certain motor skills are most often observed at different ages. For example, at six months of age, the infant may be sitting alone and beginning to crawl, thereby appearing ready to wean. At nine months of age, an infant may be able to hold a cup; at 11 months of age, an infant may be starting to walk or has mastered crawling.

To the mothers, these motor and growth changes were signs that the infant was ready and able to wean. Furthermore, matching the time to wean with the infants' readiness could facilitate the transition from breast milk to other sources of nourishment. A need to explore allows for new sets of interactions, such as taking a walk or playing with a toy. Because of these developmental changes, mothers were able to distract the infants from wanting to nurse; replacing the nursing with a walk or a storybook facilitated the weaning.

Patterns of Weaning

Gradual weaning

Three patterns of weaning were identified: gradual, MBF, and sudden severance. Not suprisingly, gradual weaning was a common pattern of weaning. Its pattern of slow elimination of breastfeedings and slow introduction of a substitute feeding was congruent with the prescribed advice found in professional and lay literature (Brazelton, 1974; Goldfarb & Tibbetts, 1980; Kitzinger, 1979; LaCerva, 1981; McLaren & Burman, 1976; Parsons, 1978; Riordan, 1983; Wood & Walker-Smith, 1981). Gradual weaning appeared to be an appropriate way of terminating breastfeeding for both the mother and her infant. For the infant, it allowed for a slow process of detachment from the nutritional dependence on breast milk and from the physical and emotional closeness of breastfeeding. For the mother, physical discomforts such as breast engorgement and leaking of milk were minimized.

Because gradual weaning was flexible, it permitted mothers to devise a weaning schedule that suited them and their infants. By gradually weaning, a step-by-step elimination of breastfeeding could be adjusted to meet any new demands by the infant or mother. Because these mothers anticipated that weaning might require four to eight weeks, there was ample time for weaning to occur in a flexible manner. Mothers who were returning to work were especially careful in planning because they had to be assured that their infants were taking a substitute feeding.

An aspect of weaning not emphasized in written advice for mothers was the importance of allowing the infant to become accustomed to the substitute bottle or cup before actual weaning from breast milk occurred. Learning to obtain milk from a bottle or drink from a cup is a prerequisite to weaning. Not being able to initiate the weaning because the infant refused the bottle or cup forced mothers to develop strategies to facilitate acceptance of the substitute feeding. Often, an occasional bottle was suggested in order to avoid an infant's refusal of the bottle. However, this did not necessarily facilitate

weaning. Instead, some mothers found that when it was time to wean they allowed their infants to play with the bottle or cup in order to accustom the infant to the taste and texture of both the nipple or cup and the formula. Accustoming the infant to a substitute feeding is a very important step in weaning from the breast. Mothers discovered that they had to teach the infant to associate a bottle with hunger and allow time for the infant to accept a plasic nipple.

A second recommendation given to mothers by nurses was to begin weaning when the infant was most hungry. However this contradicts the recommendations found in the lay and professional literature that the first breastfeeding to be substituted should be the infant's least favorite; and that the last breastfeeding to be substituted shoud be the one before bedtime (Evans & Hansen, 1980; Goldfarb & Tibbetts, 1980; Heimann, 1977; Kitzinger, 1979; LaCerva, 1981; Riordan, 1983). Mothers found that their infants were hungriest in the early morning, upon waking from a night's sleep. For these mothers, this was an inconvenient time to start weaning. Instead, they found that the mid-morning or mid-afternoon feedings were more practical, as the infant was more receptive to a bottle or cup. When the infant was hungry and/or wanted to nurse for comfort, he wants his basic needs satisfied, and the breast was preferred.

For mothers, gradual weaning minimized physical discomforts such as breast engorgement. Mothers regarded it as satisfactory because it allowed for a gentle transition from breast milk to other sources of nourishment and comfort.

Minimal breastfeeding

Most mothers found that after having gradually weaned to one or two breastfeedings a day, they could maintain this pattern of MBF and consequently stopped weaning. Discovering and assuming that they could breastfeed only once or twice daily, thereby not having to relinquish the nursing relationship, was a pleasant outcome of weaning in a gradual manner. Not all mothers believed that they were weaning, although they may have been nursing only once a day. They regarded MBF as an important part of

their interactions with their infants. Not until they stopped the pattern of MBF did they consider that they had weaned.

This pattern of weaning, MBF, was as beneficial for the mother as it was for her infant. Often the mother's benefits and enjoyment of breastfeeding, especially when the duration exceeds six months, are dismissed as "selfish" reasons. A frequent assumption is that a mother continues to breastfeed to meet her own needs. However, if a mother does not derive pleasure and fulfillment from breastfeeding or the feeling that she is providing the best nourishment for her infant, then she will not breastfeed. There is an easy and safe alternative to breastfeeding — bottle-feeding with formula — for the mother who dislikes breastfeeding. Therefore, feelings of relaxation, intense emotional closeness and pleasure are positive feedbacks for the mother to continue breastfeeding. These benefits of breastfeeding for the mother are as important as benefits for the infant.

A critical aspect of MBF is that mothers did not express milk for any reason. The supply of milk adjusted to the lessened demand, thereby avoiding any need to maintain lactation by frequent pumping of the breasts. For mothers, this did not come as a surprise. They naturally assumed that breastfeeding once or twice daily was possible.

In a study of over 500 working mothers, Auerbach and Guss (1984) found that those who continued to express milk during absences from their infants breastfed longer that those who did not. In a study by Morse et al. (1986), working mothers who practiced MBF did not express milk because some found that the expression of milk was impossible due to their busy work schedules or the inaccessibility to a clean and private area. I found that the majority of mothers did minimally breastfeed; of this group, nine continued to do so after their return to work. Two mothers who returned to work continued breastfeeding and expressing milk for less than one month. From these results, however, mothers who followed recommended advice to express milk every four hours when absent from the infant did not breastfeed beyond an additional month. They found that after one month of frequent and regular expression of milk during the day and breastfeeding at night, their

milk supply diminished until they were unable to breastfeed. Additionally, it may be possible that the requirement to express milk every four hours while at work contributed to mother's decision to stop breastfeeding.

No conclusions can be drawn in terms of duration of breastfeeding when comparing these two working mothers who expressed milk with the working mothers who minimally breastfed. Perhaps the emphasis should be on the value of MBF as an alternative to the premature weaning and termination of breastfeeding because of a mother's return to work. This is especially important because mothers may want to breastfeed and return to work. MBF may be a method to ease the transition to a mother's absence. As an alternative to total breastfeeding, MBF may also allow a mother to maintain partial breastfeeding.

MBF thus offers three distinct advantages. First, it provides the mother and her infant the emotional closeness and nutritional value of breastfeeding. The psychological bond of breastfeeding has been discussed by many authors (Kitzinger, 1979; Pryor, 1973; Raphael, 1973; Sears, 1982). Therefore, MBF allows mother and infant to enjoy the physical and emotional qualities of breastfeeding. Second, the physical, nutritional and caloric demands on mother are significantly reduced, which may help to relieve fatigue. Thirdly, MBF is a method of slow weaning (Morse et al., 1986).

In a recent nursing text (Scipien, Barnard, Chard, Howe, & Phillips, 1986) and recent pediatric nutrition text (Walker & Watkins, 1985), the authors briefly mentioned that some mothers do maintain one breastfeeding at nighttime. However, when mothers sought advice from the nurse and/or physician about weaning, the possibility of breastfeeding only one or two times daily was not taught. Instead mothers were advised to gradually wean their infants, and the expectation was that breastfeeding would terminate. An example of this was the report by a mother that her physician dismissed the possibility of partial breastfeeding using breast and bottle. The belief that mothers should approach breastfeeding as an all-or-none activity is a deterrent to "successful breastfeeding." Despite the dismissal of alternative styles of breastfeeding and weaning by some health

professionals, some mothers knew that MBF was possible and did so without the professionals' sanction.

Although, it may be possible that MBF can be initiated earlier, in this study, no mother initiated it before her infant was 3.5 months of age. Perhaps the ability to MBF requires the establishment of a supply/demand cycle of lactation. There is a physiological learning of the cycle of supply/demand of milk production (Koop & Brannon, 1984; Riordan & Countryman, 1980b) and this has been assumed to require a period of at least six weeks (Grassley & Davis, 1978). Also during this time, the infant must learn to suckle and habituate to a pattern of breastfeeding for the purposes of nourishment and comfort (Kitzinger, 1979; Winick, 1982). As a result, a mother and her infant may need to establish a pattern of total breastfeeding before MBF can be practiced. Further investigation is needed to verify the earliest age at which MBF can begin.

Sudden severance

Although discouraged in lay and professional literature, sudden severance was a pattern of weaning for mothers. The caveats against sudden severance from the breast focused on two points: the first was on the nutritional state of the infant who was deprived of breast milk and must accept a substitute feeding (Brown, 1978; Harfouche, 1970), and the second was on the possible trauma suffered by the infant because of the abrupt detachment from his mother (Amsel, 1976). For one infant who was refused breast milk and was forced to take juice and solid foods until he accepted formula, the first concern applied. Nutritionally, this infant took juice and solid foods, but he did not receive a source of milk for two to three days. Although the threat to his nutritional state is unknown, that he was denied milk is a concern. The second concern is his emotional and psychological state. The mother did report that he cried and was upset, but that after three days she said he was fine. Whether this short-term denial of milk and short-term episode of emotional upset will affect his development is unknown. Most likely a single factor such as sudden severance will not produce harmful effects, although it may be symptomatic of

poor attachment between mother and infant. Studies that have focused on the deleterious effects of sudden severance were not found. Ragheb and Smith (1979) briefly mentioned that this was a common practice in Egypt; however explicit descriptions of the practice and its outcomes were not provided. Zaslow (1976) also warned against sudden severance because of its influence on the emotional state of the infant, but she did not substantiate it with data. Perhaps a consistent denial of affection to the child may affect his well-being more than a short-lived episode of sudden severance from the breast.

Most of the infants who did wean by sudden severance did so on their own. It was their ready and immediate acceptance of and preference for the bottle that caused breastfeeding to be abruptly terminated. For the infants who did wean immediately to a bottle, their reactions were those of acceptance. Mothers reported that their infants were eager to accept the substitute feeding and didn't notice that they were no longer breastfed. From these self-reports, focus on harmful effects of sudden severance for the infant are unnecessary. However, mothers did experience breast engorgement, and this discomfort is a practical reason for a mother not to wean by this method.

That two distinct age groups of infants who weaned by sudden severance emerged is interesting. For infants less than or equal to two months of age, mothers explained this ready acceptance of a bottle and abrupt termination of breastfeedings to be due to their infants' ease in obtaining milk from a bottle. Although this question cannot be answered in this study, it is possible that this rapid acceptance of a bottle is related to a critical period of the infant's suckling. Introducing a bottle to a newborn interferes with his ability to breastfeed. It has been noted that obtaining milk from a bottle is comparatively easier than from the breast (Kitzinger, 1979; Riordan, 1983). As a consequence, the infant may prefer to bottle-feed.

The ready acceptance of a bottle for infants older than six months may be related to their widening interests. Clarke and Harmon (1983) and Brazelton (1974) have previously observed this behavior. Coupled with motor growth, the infant's increased

awareness distracts him from breastfeeding.

Mahler (1968) theorized that the primary need of an infant less than two months of age is to maintain his internal homeostasis: satisfying basic needs such as hunger, thirst, comfort, or sleep are most important in the first two months of life. Mahler (1968) labeled this period of infancy as the autistic phase. During this time the infant does not distinguish himself from others or the environment. Perhaps infants less than two months of age eagerly accept nourishment, regardless of its source, because of their primary need to satisfy hunger.

The mother's attitude about breastfeeding may affect the ease or difficulty of weaning and the pattern of weaning. Mothers who offer the breast strictly as nourishment and who satisify needs for sucking with a pacifier may find that there is less emotional attachment associated with breastfeeding. Therefore milk, whether breast or formula, will satisfy the infant's hunger regardless of its source. Other mothers, such as those who minimally breastfed their infants or who offered the breast for comfort — also referred to as "non-nutritive sucking" (Kitzinger, 1983, p. 84) — may have greater difficulty weaning and/or may find that they will need to use the strategy of distraction to wean. Therefore, breastfeeding becomes, as put by La Leche League, "more than milk" (1982, p. 169). It not only satisfies hunger but also satisfies emotional needs. The mother who found that she had to use distraction or encourage the father to put the baby to sleep realized that substituting a bottle was not the way to wean. The infant had to learn different interactions to replace the nursing.

Why certain infants readily wean, whereas others are content to MBF, has yet to be answered. Further investigations, which include direct observations of infant behaviors, are needed to clarify this issue.

Reasons for Weaning

The reasons for weaning lend insight into the predicaments that breastfeeding presents to mothers. Unlike others' reports that a fussy baby (Davies & Thomas, 1976; Hood et al., 1978; Salber et al., 1959; West, 1980; Wilkinson & Davies, 1978) and insufficient milk (Avery, 1977; Davies & Thomas, 1976; Goodine & Fried, 1984; Gunn, 1984; Klackenberg & Klackenberg-Larson, 1968; Sjolin et al., 1977; Verronen, 1982; West, 1980; Whichelow, 1982) were major reasons for weaning, I found that a mothers' returning to work posed a different dilemma: mothers weaned prematurely.

Other reasons for weaning, such as chronic tiredness and wanting more freedom, were unique to mothers who had a long duration of breastfeeding. Although the physical demands and constraints of breastfeeding overrode the emotional benefits, these mothers had established breastfeeding and had a commitment to it. Maclean et al. (1985) also found this in their breastfeeding study.

The desire for more freedom was frequently given as a reason for weaning. With total breastfeeding, the mothers experienced anxiety when absent from their infants for more than a few hours. The difficulty of locating a private area to breastfeed when away from home also limited a mother's freedom to go out with her infant. To gain more freedom, mothers offered a substitute feeding, such as formula or juice, that could be given in their absences or in a public area that deterred breastfeeding.

Some mothers who desired more freedom stated that they wanted their "bodies back." A reason for this was that dieting was possible only when the mother was assured that her infant was no longer dependent on her nutritional intake. Mothers were concerned about the quality of their milk on their infants' growth and development. Dieting while breastfeeding was believed to affect the quality and quantity of milk. Because of this, mothers considered dieting to be inappropriate while breastfeeding. Only when mothers perceived that their infants had benefitted from breast milk and were of an adequate age did they feel they could wean in order to diet.

Signs of an infant's readiness to wean, such as the eruption of teeth or inattention at the breast, were indications to the mother that breastfeeding had run its course in terms of providing nourishment and comfort. Weaning was timely and considered a natural developmental milestone.

The importance of social coercion to wean has been documented by Morse et al. (in press-b). Mothers were unable to cope in a milieu that regarded breastfeeding as socially unacceptable and nutritionally inferior. This phenomenon is further discussed in the section, *Social Coercion to Wean*.

The Working Mother

Recently, it has been reported that mothers are weaning because of their return to work (Maclean et al, 1985; Yeung, 1983). Because the onus is on mother to provide optimal child care, working outside the home poses new demands and conflicts for the mother who wishes to breastfeed. Mothers may not want to relinquish the breastfeeding relationship but do so because of the advice that insists on the frequent and regular expression of milk, proper storage of milk, and breastfeeding at night in order to maintain lactation (La Cerva, 1981; MacLaughlin & Strelnick, 1984). This advice presents mothers with several problems. A first problem is that many mothers experienced chronic tiredness during the period of breastfeeding and, for the working mother, the constant and unnecessary expression of milk creates an enormous physical drain. Preserving mother's energy is important in maintaining her health and ability to cope with employment and child care.

Secondly, following advice to frequently empty the breasts when absent from the infant is soon found to be impractical. The needs of mothers are totally ignored. The duty of having to routinely isolate oneself in order to express milk eventually becomes a burden. Therefore a key to successful breastfeeding may be the modification of it to fit mothers' needs. If a mother adjusts her milk supply to the lowered demand of her infant, thereby

eliminating the need to routinely express milk, she may continue breastfeeding after her return to work.

The duration of breastfeeding may not be the concern of a working mother. Perhaps a working mother will desire to maintain a nursing relationship for a period of time after her return to work in order to ease the transition of her separation from her infant. Instead of two changes in the mother-child relationship, separation of mother and severance from the breast, there will be only one change, separation of mother. Broome (1981) asserted that for working mothers breastfeeding is an emotional bond because it is "one thing that they can do for their babies" (p. 202). The risk of infection from a stasis of milk (Broome, 1981), the failure to maintain lactation (Auerbach & Guss, 1984; LaCerva, 1981; MacLaughlin & Strelnick, 1984), and intolerance of cow's milk or formula are some of the reasons why mothers are advised to express milk during their absence from their infants. Further investigation is needed to determine if MBF is an alternative method of breastfeeding for both mothers who seek paid employment and those who do not.

Anticipating a change in the mother-infant relationship, mothers who returned to work prepared for their absence two months beforehand. They planned a weaning strategy that allowed enough time for weaning and the acceptance of substitute milk and solid foods in order to maintain nutrition. For the working mother, weaning must be successful in terms of the elimination of breastfeedings which occur during her absence and her infant's acceptance of new methods of feeding. Countryman (1983) advised that the mother provide her infant with bottles of expressed milk during her working hours. However, working mothers were found to offer solid foods to their infants at a statistically significantly earlier age than non-working mothers. The introduction of solid foods facilitates weaning and insures the mother that her infant will be nourished in her absence. The infant then receives a wide variety of foods and accepts a substitute milk. For infants who tolerate formula and take a wide variety of foods, a bottle of expressed milk is unnecessary; and mothers will not risk infection or contamination when expressing milk in

public washrooms. However for infants who cannot tolerate formula or cow's milk, MBF will not be an alternative. Bottles of expressed milk will be necessary while the mother is at work.

Premature weaning because of a mother's return to work may instill feelings of guilt or loss (Bishop, 1985; MacLaughlin & Strelnick, 1984). One of the immeasurable benefits of breastfeeding for the working mother is that it secures her relationship with her infant and helps to minimize their separation during working hours. For the working mother, MBF is an alternative to either weaning or total breastfeeding.

Social Coercion to Wean

The role of the doula has been considered a formidable influence in the course of the mother's breastfeeding experience (Jelliffe & Jelliffe, 1979; Ladas, 1970; Raphael, 1973). The ability of a mother to adjust and adapt to the demands of breastfeeding is fostered by a supportive person who firmly believes that breastfeeding is good and essential to the mother-infant dyad. Support is defined by Kahn (1979) as an "interpersonal transaction that includes the expression of positive affect of one person toward the endorsement of another person's behavior, perceptions, or expressed views, and the giving of symbolic or material aid to another" (p. 85). The doula, therefore, not only physically assists the mother in household duties and infant care but also must endorse the mother's decision to breastfeed. This primary role of the doula, to support the mother's decision to breastfeed, is singly the most important influence on a mother's initiation and duration of breastfeeding. This support person is often the husband but can also be friends of the mother, grandparents of the child, nurses and physicians, self-help groups, and even a book (Kitzinger, 1979; Morse et al., in press-b; Raphael, 1973; Riordan, 1983). Because of the powerful influence of the doula on the course of lactation, the doula is also a facilitator of weaning. Through the withdrawal of support and the coercion to wean, the doula is responsible for the initiation and termination of breastfeeding. Morse et al. (in press-b)

have delineated this phenomenon of the doula as a determinant in weaning. They proposed that, despite a mother's overwhelming desire to breastfeed, weaning will occur when the doula withdraws support and makes deliberate gestures, such as overt comments, to urge weaning.

Many people may assume the role of doula throughout the course of lactation. Postpartum nurses and pediatricians are supportive during early infancy and are eager to assume the role of doula. Family members and friends are delighted that the infant is thriving on breast milk. During this period, however, parents-in-law, nurses, and physicians will attribute otherwise normal infant behavior, such as fussiness and crying, to the quantity and quality of mother's milk. A fear is that mother's milk may be inadequate or even harmful. The advice is to offer formula to the infant. The disbelief that mother's milk is of any benefit prompts others to encourage mother to give formula. As Kahn (1979) noted, the endorsement of another's views is a key to support. Failing to believe breast milk is the best food for an infant undermines a mother's efforts to breastfeed.

Mothers who nurse infants more than one year of age and who continue to receive support from their husbands, begin to conceal their practice of breastfeeding from friends and relatives. The practice of nursing a child who is aware of his surroundings and no longer has the appearance of a newborn is perceived to be inappropriate in public. Mothers fear scorn if they should nurse a child outside the home. Avery (1977) has coined this behavior of secretly breastfeeding as "closet nursing." Confining and isolating breastfeeding to the home or in private surroundings, such as a public washroom or dressing room of a department store, exemplifies the plight of breastfeeding mothers. Maclean et al. (1985) found that mothers do perceive the lack of appropriate areas to nurse infants as deterrents to "women moving about freely" (p. 183). It is the lack of social support that banishes a mother to breastfeed her child in isolation.

In this study, the main doula throughout the duration of breastfeeding was the husband. If he continued to support the decision to breastfeed and firmly believed

breastfeeding to be good and essential, he would assure mother that she was doing "the right thing."

Withdrawal of support and coercion to wean by doulas other than the husband were not final determinants in a mother's decision to wean. In this study, the husband was found to be the cornerstone in the course of lactation. Morse et al. (in press-b) also observed that the husband was usually the last person to withdraw support. When the husband began to doubt the value of breastfeeding, the mother weaned her infant. Despite the mother's determination to breastfeed, in the absence of his support she will wean.

Although the doula has been considered an essential component in breastfeeding, the second role as a facilitator of weaning is equally important in the duration of breastfeeding. Those who assume the role of doula must believe that breast milk is appropriate and beneficial for children, even beyond infancy. The doula must also know that a breastfed baby will not have feeding patterns similar to a bottle-fed baby (Culpin, 1984). Whereas the bottle-fed baby will routinely feed every three to four hours, the breastfed baby will determine his own schedule, feeding when hungry and nursing for comfort. Because family members, especially the father of the infant, influence the course of lactation, they must also be included in breastfeeding education.

That breastfeeding must occur in a private place is a message to mother that breastfeeding is not acceptable and is embarrassing for onlookers. A paradox exists: whereas breastfeeding is wholeheartedly advised and promoted by pediatricians (Canadian Paediatric Society, 1978; Myres, 1983), nurses (Ellis & Hewat, 1983; Riordan, 1983), dietitians (Arango, 1984; Axelson et al., 1985), and lay groups, such as La Leche League, breastfeeding a child outside the home is, in most Western cultures, socially unacceptable.

McIntosh (1985) found that mothers were unwilling to breastfeed in front of others. They felt that they had to isolate themselves, often in bathrooms, when breastfeeding their infants. In a study by Jones et al. (1977), disapproval and embarrassment were attitudes toward mothers breastfeeding in public. The conflicting roles

of the female breast as a sexual attractant and an infant nurturant and the taboo of nursing in public are obstacles to breastfeeding (Jelliffe & Jelliffe, 1979; Newton & Newton, 1967; Waletzky, 1979). Societal constraints and the lack of social acceptance of breastfeeding contribute more to the termination of breastfeeding than the lack of knowledge or skills of how to breastfeed (Culpin, 1984; McIntosh, 1985). Therefore, campaigns targetted at mothers to promote breastfeeding are narrowly focused (Morse et al., in press-b). Until breastfeeding is socially valued as a necessary and natural part of infant care, mothers will be forced to resolve the conflict of desiring, but fearing disapproval, to breastfeed. As with the doula, the social values regarding optimal infant feeding will dominate the mother's initiation and continuation of lactation. Although mothers were determined to breastfeed, they all described their nursing behaviors outside the home as discreet. Evidence is that regardless of a mother's choice she will adapt her infant feeding behavior to suit the social climate.

Refusal of the Breast

Often an infant's behavior is misinterpreted as rejecting breast milk because of the lack of confidence in the quantity and quality of human milk. That mother's milk can satisfy hunger and support growth is not firmly believed, not only by the mother but also by her husband, friends, parents-in-law and health professionals. An infant's fussiness and crying are too easily attributed to the quantity and quality of mother's milk. The psychological component of the let-down reflex has been discussed by Gussler and Briesemeister (1980). Whichelow (1982) stated that it was the absence of a let-down reflex that caused insufficient milk. However, in my study, mothers were confident about their milk supply and did not report insufficient milk as a reason for their infants' refusal of the breast. They described their infants' refusal of the breast as a normal reaction to their infants' immaturity to suckle, increased cognition, nasal congestion, gastric distention, and/or bottle preference. Too often an infant's normal behavior is misinterpreted when he

is breastfed. Hewat and Ellis (1986) found differences in mothers' interpretations of their infants' behaviors according to whether they breastfed for a short or long duration. Some mothers attributed an infant's crying and fussy behavior to his need for attention, whereas other mothers intrepreted the same behavior as a need for more milk. It is important that mothers know that infants who breastfeed do not eat at arbitrarily prescribed times of the day.

Activity which increases with age (Brazelton, 1974) and growth spurts will increase an infant's demand for milk. Conversely, a plateau in the rate of growth, diminished activity, and increased cognition will lessen an infant's demand for milk and time at the breast. One mother reported that her infant refused to nurse because he associated it with sleeping. When he did not want to sleep and instead wanted to explore his surroundings, he refused to nurse. However, he continued to gain weight and nursed when hungry.

The unpredictability of breastfeeding is that an infant will not necessarily maintain a pattern of feeding and will adjust his feeding to meet greater or lesser demands. As Culpin (1984) stated, the reality of breastfeeding is that a routine feeding pattern may never be established. All too often, the breastfed baby's feeding and sleeping patterns are compared to a bottle-fed baby's. However, doing so will only make the mother who breastfeeds appear inadequate. A breastfed baby will feed when hungry or thirsty. To make matters more confusing, a breastfed baby will also nurse solely for comfort. Mothers need to know that the supply and demand of breastfeeding not only applies to the production of milk but also applies to the changing growth and emotional needs of their infants.

Mothers who do not know the unpredictability of breastfeeding and normal infant behavior may perceive their infants as refusing the breast. Clarke and Harmon (1983) have argued that from an evolutionary perspective, it is unlikely that an infant would refuse biologically specific breast milk. Additionally, the availability of a safe and acceptable alternative to breastfeeding — formula — may allow mothers to abandon breastfeeding

when difficulties arise. Finally, a mother's report that her infant rejects the breast may be an acceptable excuse for her desire to bottle-feed.

Investigations of an infant's refusal of the breast, including this one, have only used the mother's self-reports. Actual observations of infants are needed to further delineate this phenomenon.

The report of a nursing "strike" by one mother did not fully explain why the infant temporarily refused to nurse. Perhaps an infant becomes confused when his mother reacts sharply to biting of the nipple. A common explanation for a nursing strike is that the infant does not feel well (La Leche League, 1972; Sears, 1982). Mothers are cautioned against interpreting a nursing strike as weaning and are advised to offer the breast to a sleeping infant. However, this advice was not useful; instead, the mother found that perseverance and continual offering of the breast resolved the problem. Further investigations are needed to uncover factors associated with infants who temporarily refuse to nurse.

Mother's Search for Information on Weaning

Mothers often consulted the lay literature, other experienced mothers, nurses, and physicians about weaning and then used the advice as they thought fit. Research by Hally, Bond, Crawley, Gregson, Philips, & Russell (1984) and Rajan (1985) also found that health professionals are frequently consulted when mothers decide to wean. Only two mothers were advised to adapt and modify their breastfeeding as an alternative to weaning. Those who advised sudden severance from the breast disregarded the emotional significance of breastfeeding and, as importantly, the physical discomforts to the mothers.

Mothers' Perceptions of Infants' Feelings toward Weaning

Mothers carefully watched their infants' behaviors during weaning. If the infant showed signs of emotional upset, mothers resumed breastfeeding and stabilized the weaning. As is often recommended in the literature, weaning in a gentle manner and

tailoring it to meet the infant's changing needs prevents the child from feeling a sense of loss and abandonment (Kitzinger, 1979; Pryor, 1973).

For some mothers, weaning became a matter of discipline with children who were older than one year and refused to wean. One mother found that as she tried to wean from two breastfeedings a day, her child would demand to be nursed. If the mother refused, the child would become hysterical. Although the mother used distraction as a way to wean, the child insisted on nursing. Breastfeeding for the mother was no longer an enjoyable experience. Sudden severance from MBF for these mothers was their only alternative. They continued to interact with their children and attempted to use distraction to avoid nursing. However, deliberate sudden severance from total breastfeedings for an infant who refuses to wean may result in the infant feeling abandoned (Riordan, 1983). Harfouche (1970), Zaslow (1976), and Pryor (1973) warned that abrupt weaning may be traumatic. Particularly, Zaslow argued that improper weaning may affect the infant more than any other "aspect of the nurturing process" (p. 61). There may be a great impact on the infant when he/she is severed from the breast, because no other food will substitute for the physical closeness of the mother. However, studies supporting these fears of emotional trauma from abupt weaning were not found. Most likely, a mother who does not nurture and care for her infant in any way may be more detrimental to an infant than a single event of abrupt weaning.

Mothers' Feelings upon Weaning

The phenomena of maternal-led and infant-led weaning have been associated with mothers' reactions to weaning. An assumption is that the mother who initiates the weaning will accept it (Bishop, 1985). However, in this study, no association was found between mothers' feelings and the initiator of the weaning. Feelings of loss upon weaning were experienced by many mothers who weaned because of their return to work. Many mothers were pleased that their infants had initiated the weaning, thereby relieving them of the

responsibility of terminating the relationship.

All mothers accepted weaning as a milestone in the infant's development. Mothers who planned a gradual weaning but instead weaned within a few days due to the infant's immediate acceptance of a bottle expressed feelings of devastation and loss. They did not want to relinquish the breastfeeding relationship but did so because they perceived their infants to be happier with a bottle.

Amsel (1976) stated that the nursing mother also needs to be weaned from breastfeeding. She argued that breastfeeding for the mother is a means of attachment to her infant and the "sudden termination" (p. 53) of nursing may cause a crisis for her. A mother may grieve at the loss of this special closeness with her infant. Some mothers whose infants immediately weaned did grieve; however, the mother-child relationship was secure enough to accept the termination of breastfeeding and to assume new activities that enhanced the mother-child bond, despite an abrupt weaning.

Nipple Confusion

Unresolved from this study is the debate on the value of the early introduction of an occasional bottle, commonly referred to as a relief bottle, in the facilitation of weaning (Riordan, 1983; Sears, 1982). Some infants refused to wean despite the fact that they had taken an occasional bottle of formula since birth, whereas some infants who were less than two months of age readily accepted the bottle and subsequently refused to breastfeed.

Giving an occasional bottle is a concern to mothers. They need to know that it may interfere with both the production of milk and their infant's desire to breastfeed. Supplementing breast milk with bottle-feedings early in lactation interferes with the establishment of a milk supply that is necessary to meet the infant's demands (Ellis & Hewat, 1983). As importantly, the newborn may become confused by having to obtain milk from two sources, breast and bottle. He may prefer the bottle because the milk is more easily obtained, and as a result he may refuse to breastfeed. For the mother who

wishes to breastfeed, her infant's preference for the bottle will be unwelcomed. Thus, the occasional bottle might interfere with a mother's choice of infant feeding.

It is also important for mothers to know that an occasional bottle may not facilitate weaning. Some older infants who took an occasional bottle refused to wean from breastfeeding. For them, breastfeeding was associated with comfort and sleep; a bottle was not a suitable replacement. A mother will find that the occasional bottle will not replace the nursings. Instead she will need to distract her infant from breastfeeding and develop different interactions.

The practical advantages of the occasional bottle cannot be overlooked. It is convenient for a mother who anticipates a three- or four- hour absence from her infant, because she is assured that if her infant becomes hungry, he will take a bottle. Additionally, for some mothers, the occasional bottle did facilitate weaning. Because the infant was already accustomed to bottle-feeding, weaning was accomplished simply by adding more bottles a day.

Implications for Nursing Practice

Three implications derived from this research are the development of teaching protocols on weaning, the support of weaning theory, and the need for further research on weaning. All are discussed below. Although each is important, the development of teaching protocols is the most valuble because of its benefits for nursing practice.

Teaching protocols should include two of the three patterns of weaning described in this study: gradual and MBF. Because these methods were comfortable for both mother and infant, strategies for the introduction of the bottle and formula should also be included. For the working mother who may feel compelled to wean due to a limited maternity leave, MBF may offer an alternative method to continue breastfeeding while working. Although most mothers "discovered" MBF independently, some were not aware that it was possible. Nurses should teach that breastfeeding can be modified to

accommodate both mother's and infant's needs. The third pattern of weaning, sudden severance, usually occurred when the infant readily accepted a bottle the first time it was offered. Rapid weaning may result when a mother, who sincerely wishes to breastfeed, introduces a "relief" bottle shortly after birth. Nurses need to forewarn mothers that some infants, eager to take a bottle, may subsequently prefer it to the breast. Conversely, an occasional bottle may not facilitate weaning. As the infant learns to associate breastfeeding with comfort, security, and satiety, the strategy to wean by simply substituting bottles for nursings may not work. The infant must learn other sources of comfort requiring distraction from breastfeedings and/or increased involvement of the father in infant care.

The second implication of these research findings is support of theory as a basis for practice. The theory of social coercion to wean as proposed by Morse et al. (in press-b) highlights the important role of husbands and other family members or friends in assisting the mother with her infant. Because the family influences a mother's decision to breastfeed, they must also understand the normal behavior of a breastfed infant and the value of breast milk even beyond the newborn period. This research also confirmed contentions by Brazelton (1974) and Clarke and Harmon (1983) that an infant's self-weaning may be due to normal growth and developmental changes. Nurses can use these findings to teach mothers the behavior of a breastfed infant, and that normal reactions to growth or physical discomforts do not indicate self-weaning.

The third implication of the research is the need for further investigation on the process of weaning from other cultural and age groups. Further research may delineate and describe unusual practices of weaning or other influences on a mother's choice of infant feeding. Recommendations for future nursing research are discussed in the next section.

Recommendations for Future Nursing Research

Further research is needed to explore the patterns of weaning in a larger and representative sample of mothers. Also, actual observations of infants who self-wean or refuse the breast are needed to validate mothers' self-reports of such infant behaviors.

Also, further investigation on the advice and support given by the health professional is needed. Mothers in this study reported the kind of information the nurse or physician gave them; however what the nurse or physician actually said is unknown. Perhaps by identifying the gap in the communication between the health professional and the mother, teaching can become more effective.

The working mother is taught by health professionals to manually express milk every four hours in order to maintain a milk supply. However, two mothers in this study who did express milk while at work stopped breastfeeding within a month. They stated that their milk dried up. Investigations into the stabilization of lactation during a plateau in weaning will lend insight into the consequences of artificial interruptions in the natural production of milk.

Additional research should focus on the theory of social coercion to wean. From this study, the doula who was supportive of the mother during breastfeeding later urged weaning. Because support of the mother is primary in any initiation and duration of breastfeeding, further study of the social influences which initiate weaning will solidify the theory of social coercion to wean. Social coercion to wean also appears to be related to infant age. As infants lose their newborn appearance and become interested in their surroundings, breastfeeding becomes less acceptable. Society does not value breast milk as an ideal food for the infant, particularly beyond three to four months. Further investigation of cultural values regarding breast milk and its suitability for infants beyond infancy is needed.

In accordance with theory development, further explorations into the phenomenon of MBF will determine its suitability for all mothers. New research questions have emerged

from this study: Can MBF be taught to mothers? Does the consistent manual expression of milk interfere with lactation? What is the earliest age at which MBF can be initiated? Experimental designs that incorporate control groups may answer these questions. Because MBF is important in extending the duration of breastfeeding, the need for further research is indicated.

Additional research should focus on MBF as a pattern of breastfeeding for the working mother. A high percentage of mothers stated their return to work as a reason for weaning. Further investigation of the management of breastfeeding by working mothers will determine the prevalence and suitability of MBF. Tailoring breastfeeding to fit mothers' lifestyles is basic to promoting breastfeeding.

Unresolved from this study are the characteristics of infants who wean easily. Further research should examine the pattern of gradual weaning with specific attention to infant and maternal characteristics. Why do only some infants refuse to wean, whereas others do not? Is it due to inherent personality traits, or is it due to characteristics of the mother?

Additionally, many mothers believe that an occasional bottle or soother facilitates weaning. In this study, some infants who received an occasional bottle did not want to wean. A survey of mothers who introduced the bottle or soother for the purpose of facilitating weaning is needed to further investigate this issue.

Summary and Conclusion

There are two suitable and comfortable patterns of weaning, gradual weaning and minimal breastfeeding. These patterns allow for a gentle transition from breastfeeding to new sources of nourishment and new interactions that provide comfort. The third pattern of weaning, sudden severance from the breast, is a less appropriate method of weaning. Because of its disregard for the emotional underpinnings of breastfeeding and for the physical discomforts such as breast engorgement, sudden severance should be avoided if

possible.

The influence and support of the doula on the initiation of lactation have been recognized by many authors. From this study, the doula was also found to be a facilitator of weaning; this finding confirmed previous theory proposed by Morse et al. (1986). When breastfeeding was no longer regarded as appropriate by the doula, he/she urged weaning. The doula was most often the husband; when he withdrew support, the mother weaned despite her desire to continue breastfeeding. Additionally, the amount of support a mother received for breastfeeding was inversely related to her infant's age. When her infant was more than one year of age, the mother began to keep breastfeeding a secret, and she began to seek support in order to affirm her decision to continue breastfeeding.

An infant's refusal of the breast does not necessarily indicate weaning. Normal infant behavior such as satiety, gastric distention, and nasal congestion that interfere with suckling cause an infant to refuse to nurse.

The practical implications of this research for nursing are in the kind of information nurses need to teach mothers. First, gradual weaning and weaning by MBF are suitable methods of terminating breastfeeding for both mother and infant. Mothers need to know that normal infant behaviors do not indicate weaning. The infant may need to be burped in order to continue feeding or, perhaps, the infant is satiated and does not want to continue feeding. It is important to include the husband and grandparents in the teaching, because they also need to know that normal infant behaviors do not indicate that breast milk is inadequate or harmful. The amount of support the mother receives from her husband and others who are influential in the family will affect the duration of breastfeeding. Additionally, the importance of societal norms concerning the appropriateness of breastfeeding also influences a mother's decision to continue breastfeeding.

A strength of the study is the self-reports by mothers explaining their experiences of weaning. The flexible interview allowed for clarification and elaboration of responses.

The sample size was adequate because it provided numerous accounts of the patterns of weaning.

Future research should focus on why mothers terminate breastfeeding before six weeks. Few mothers who weaned before six weeks participated in the study. A strategy that is most likely to be useful is to obtain the sample prenatally and to follow-up for at least two months. As well, the pattern of MBF needs further investigation in order to determine its suitability for all mothers, including those who return to work.

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APPENDIX A

Poster

Volunteers needed for...

Breastfeeding and Weaning Research

Investigator: Karen Williams, R.N.
University of Alberta
Faculty of Nursing

We are interested in talking with
First-Time Mothers
who are breastfeeding and have
decided to wean their infants.

There will be 2 telephone
interviews about weaning.

1st Interview: When weaning has begun.

2nd Interview: When child is completely weaned from breastfeedings.

Please telephone Karen Williams, R.N.
at 435-0234 anytime.

Please take a card.

⇩

APPENDIX B

Newspaper Articles

THE EDMONTON JOURNAL, Tuesday, May 14, 1985

Weaning process subject of report

The hows, whens and whys of weaning your baby are the subject of a University of Alberta nursing study.

"It's important because many mothers do have problems weaning," says registered nurse Karen Williams, whose graduate research project revolves around the end of the breastfeeding process.

Because the breast is not only a source of nourishment but a source of comfort, either child or mother can sometimes be reluctant to wean, she says.

Problems ensue, for instance, when a child continues to want the breast and refuse a bottle or cup while the mother wants to get on with life without nursing several times a day.

"Some babies just won't give up the breast," says Williams.

In some cases, a mother may be reluctant to let go — feeling she is letting go of her offspring's babyhood or childhood.

If there are coping methods that one mother could pass to another, Williams wants to know about them.

She also wants to talk to the mothers who have an easy time of the process.

She is looking for 70 first-time mothers who are in the process of weaning or have weaned a baby within the last two months.

Participants would answer a 20-minute telephone questionnaire that would be the basis for a report to be released this fall.

Edmonton Examiner, Monday, May 27, 1985

U of A researcher wants breastfeeders

A University of Alberta researcher would like to hear from breastfeeding mothers who have recently weaned their child.

Karen Williams, who works with the U of A's faculty of nursing, is conducting a study on breastfeeding and in particular the weaning process.

"I'd like to talk to mothers who have just weaned a child or are in the process," Williams explained last week. "Many mothers experience difficulties with their child at the weaning stage. I'd like to find out how mothers have successfully weaned their children."

Williams says any information she receives will be kept confidential. The results of her study will be published this fall.

Anyone wishing to share information may call Williams at 435-0234.

AARN NEWSLETTER

Vol. 41, No. 6 June, 1985

RESEARCH PROJECT:

The Process of Weaning

Karen Williams, R.N., B.ScN., and a graduate student at the University of Alberta, is conducting a nursing research study on the process of weaning a child from breastfeeding. This study will provide insight into an aspect of breastfeeding which is often neglected or ignored by the health professional.

Although abundant information is available to mothers who wish to learn the mechanics or benefits of breastfeeding, mothers who decide to wean have few sources of information. For the nurse also, there is a dearth of research literature available on the process of weaning, on problems encountered during weaning, or on suitable solutions or alternatives to resolve a difficult period of weaning. Much remains unknown about *how* or *why* mothers wean, particularly in the case of infants less than 1-2 months old.

This study is currently in progress. Participants who wish to be interviewed about their experiences of weaning must be in the process of weaning. Also, mothers must be weaning a first born child. Those mothers interested in participating should please call 435-0234 (Edmonton), Monday through Friday, days or evenings.

APPENDIX C

Semi-Structured Guided Interviews

Subject #_____

Date _____

INTERVIEW SCHEDULE I

Informed Consent and Data Sheet

The University of Alberta

Faculty of Nursing

INTRODUCTION

Thank your for responding to the request for mothers to call. My name is Karen Williams. I am an R.N. and a graduate student at The University of Alberta. I will be asking you questions about your experience of breastfeeding and weaning. *The information obtained is for a nursing research study affiliated solely with the University of Alberta Faculty of Nursing. The study is not associated with the health units.* My interest is to find out about mothers' experiences when weaning their children.

CONSENT

I will be asking you many questions about weaning. There will be a second interview when you have finished nursing. Each interview will take about 30 minutes.

I would like to tape-record the interview. You may refuse to answer any question and you may stop the interview at any time.

Your name and your baby's name will not be used in any written account of the study. All tapes will be erased when the study is finished.

Do you have any questions? _____

Are you willing to be interviewed? _____

Name _____

Phone number _____

Interviewer's Signature _____

Is this a convenient time to talk? _____

If not, when will be a convenient time to call you back? _____

BABY'S VARIABLES

1. Name _____
2. Sex _____
3. Birthdate _____
4. Birth Weight _____
5. Present Weight _____
6. Type of delivery _____

Complications during pregnancy, delivery or afterwards?

_____

7. Baby's health at birth? _____
8. Baby's health since birth? _____
9. Have you talked to the doctor for any reason? _____

Why?

_____

10. Has a nurse visited since the baby was born? _____

Why?

_____

11. How would you describe your baby's personality?

_____

BREASTFEEDING INFORMATION

12a. Did you have anyone help you at home after the baby was born?

_____

12b. Who helped you? the most, at home, after the baby's birth?

_____

12c. Was it a benefit to you? What did he/she do that was helpful?

_____

12d. Has anyone helped you since that time?

_____

13. How does your baby behave when she/he nurses?

_____

_____

14. Please describe how your baby nurses?

_____

15. How are you feeling? (physically, emotionally)

_____

16. How were you physically feeling over the weeks you were nursing?

_____

16.5 Was your breastfeeding experience similar to what you had expected? (If no, how was it different?)

_____

17a. Who supported you in breastfeeding?

17b. Who was the most supportive?

17c. How were they supportive?

17d. Who was the least supportive?

17e. How were they least supportive?

18. Was anyone negative about your breastfeeding?

19a. How did your partner feel about your breastfeeding?

(Probes)

19b. How did others feel about your breastfeeding?

19c. Your mother?

19d. Your mother-in-law?

19e. Grandfathers of the baby?

19f. Friends?

19g. Doctor?

19h. Nurse?

19i. Others?

---

20. Who gave you hints about breastfeeding?

---

21. Who did you ask for advice about breastfeeding?

---

22. Do you have a particular place in the home where you usually nurse the baby?

---

23. How many times a day were you breastfeeding your baby before you decided to wean?

23.5. How long did you intend (or want) to breastfeed?

---

24. What do you mean by weaning? (How would you define weaning?)

WEANING INFORMATION

25. When did you start weaning?

26. Did you attempt weaning before this time but then restart breastfeeding?

27a. Who decided it was time to wean? How did you decide it was time to to wean?

27b. Why?

27c. Does your baby ever appear to refuse the breast?

27d. What does she/he do?

27e. How did you feel about that?

28a. Did anyone advise you on how to wean?

28b. Who?

28c. What did he/she/they advise?

29. Who did you ask for advice about weaning?

30. How did you learn how to wean?

31a. Often people are given advice from other people about different things to try to get baby to stop nursing. Did people suggest anything to you on how to get baby to stop nursing?

31b. What?

31c. Did you try any?

31d. Did they work?

32. Which breastfeeding did you stop first?

33. Which breastfeeding do you plan to drop next?

34. How long did you wait till a next breastfeeding was dropped?

35. What are you weaning baby onto? (cup?, bottle?)

36a. Have you offered any solids?

36b. What kind? When?

36c. How are you giving the solids to your baby? (in bottle, on spoon)?

36d. Have there been any problems since solids were introduced?

37a. Have you had any problems with you breasts since weaning began?

37b. What are they?

_____

_____

37c. What remedies have helped?

_____

_____

38. If 'yes' to a particular place in the home where mother usual breastfeeds ASK:

Has the particular place where you usually nurse changed since you started weaning?

_____

39. How do you feel about weaning?

_____

_____

40. How do you think your baby feels about weaning?

_____

_____

41. How did (the most supportive person) _____ feel about weaning?

_____

_____

42. How did (the least supportive person) _____ feel about weaning?

_____

_____

42.5 Have you noticed any differences in you baby's behavior (e.g. feeding times, crying, fussiness, sleeping patterns) since you have started weaning?

_____

_____

43a. How did others feel about weaning?

43b. Friends?

_____

_____

43c. Your mother?

_____

_____

43d. Mother-in-law?

_____

_____

43e. Your partner?

43f. Doctor?

43g. Nurse?

43h. Others?

44a. Did you attend prenatal classes?

44b. Did anyone in prenatal classes teach you how to breastfeed?

44c. Did anyone in prenatal classes teach you how to wean? or give you information on how to wean?

44d. Did you attend *La Leche League* meetings? (If yes, are you still?)

_____

45. Is there anything else you would like me to know about the weaning?

_____

_____

MOTHER'S VARIABLES

46. Age

_____

47. Education

_____

48a. Are you employed outside the home?

_____

48b. Are you on maternity leave? _____

48c. How long? _____

49. How many people live in the household? _____

Relationships?

_____

_____

50. Partner's age

_____

51. His Education

_____

52. His Occupation

_____

53. Ethnic Backgrounds

_____

54. Are you on any medication?

_____

_____

55. Do you smoke?

_____

56. Are you eating regular or are you dieting?

_____

CLOSING

Thank you for participating. Please call me when you have completely weaned your baby from breastfeeding?

Would you like a final report of the completed study? _____

Address

_____

_____

If I don't hear from you in 6-8 weeks, may I call you to see how the weaning is going?

Phone number _____

Would you like to ask me anything?

_____

_____

Subject #————————

Date ————————

INTERVIEW SCHEDULE II

Informed Consent and Data Sheet

The Universtiy of Alberta

Faculty of Nursing

Baby's age at 1st interview ————

Baby's name ————————

Sex ————————

Mother's name ————————

Phone number ————————

INTRODUCTION

Thank you for calling back. Again, my name is Karen Williams. I an an R.N. and graduate student at the University of Alberta. I will be asking you questions about your weaning experience. The information obtained is for a nursing research study. *This study is affiliated soley with the University of Alberta. It is not associated with any of the health units.* Although, the questions may be like the first interview, I am interested in how you weaned (baby's name) _____

CONSENT

The interview will take about 30 minutes. I would like to tape record the interview. You may refuse to answer any question and you may stop the interview at any time. Any information you provide will be kept confidential. Your name and your baby's name will not be used in any written account of the study. All tapes will be erased when the study is finished.

Do you have any questions?

Would you like to be interviewed? _____

_____

Name _____

Date _____

Interviewer's Signature _____

WEANING INFORMATION

Last time I spoke with you, (baby's name) _____

was (age) _____.

57. When did weaning finish?

_____

_____

58. When was the last time (baby's name) _____ took the breast?

_____

_____

59. Last time I spoke with you, you were feeding the baby _____

at _____

How did this change?

_____

_____

60a. Please tell me how you weaned?

_____

_____

60b. Which breastfeeding did you drop first?

_____

60c. How much time did you allow befor you dropped the next breastfeeding?

_____

60d. What was the second breastfeeding you dropped?

_____

60e. The third?

_____

60f. The fourth

_____

60g. What was the last breastfeeding to be dropped?

_____

60h. Who advise you on how to eliminate breastfeedings?

_____

_____

61. What did you wean (baby's name) _____ onto?

_____

_____

Spoon? Cup? Bottle? _____

62a. Have you introduced solids?

_____

62b. What type?

62c. What amount?

62d. How did you give the baby the solids? (bottle, spoon)

62e. When did you introduce the solids?

62f. Were there any problems when solids were introduced?

62g. What did you do?

63. Who advised you on how to introduce solids?

64a. Often mothers are given advice from other people about different things to try to get baby to stop nursing. Did anyone suggest these things to you?

64b. Did you try any?

_____

64c. Did they work?

_____

65. Who urged you the most to wean the baby? Why?

_____

_____

66. Who urged you the least to wean the baby? Why?

_____

_____

67a. How do you feel about the nursing experience now that you have weaned?

_____

_____

67b. How do you think the baby feels? Have you noticed any differences in his/her behavior?

_____

_____

68a. What were the feelings of others when weaning was finished?

68b. Partner?

68c. Your mother?

68d. Your mother-in-law?

68e. Doctor?

68f. Nurse?

68g. Friends

69. Overall, how would you judge weaning in terms of easiness or difficulty?

How do you feel about the weaning experience now that it is over?

70. If you have another child, would you breastfeed again? How long would you like to breastfeed?

71a. Would you wean differently?

71b. How?

72. What advice would you give to mothers who wish to wean?

72.5 How could health professionals provide more (or better) assistance to mothers during the weaning period?

73. Would you like to tell me anything else about the weaning?

_____

_____

CLOSING

Do you have any questions for me?

_____

_____

Thank you for participating in the study.

If pertinent, ASK:

Would you like a final report of the completed study? _____

Address

_____

_____

If 'yes' to same question (but asked in first interview), SAY:

I will send you a final report when the study is completed. (confirm address)